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International Paper Reports $15,696,577

This Net Profit In 1940 Was the Largest In the Company's History and Compares With $4,893,590 In 1939—Kraft Production of the Companies For 1940 Was Double Their Newsprint Production.

Richard J. Cullen, president, in presenting the twelfth annual report of the International Paper and Power Company says:—

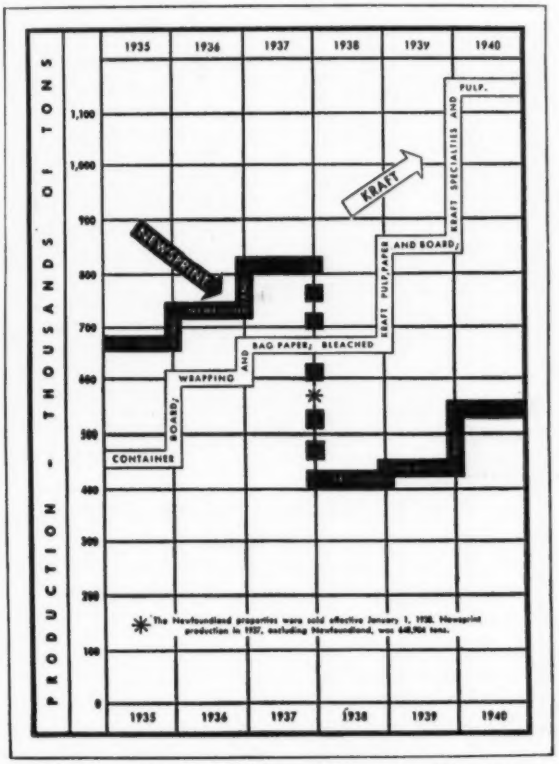
Production, sales and consolidated net profit in 1940 were the largest in the company's history. Net profit amounted to $15,696,577 as compared to $4,893,590 in 1939.

During the year 1940 dividends amounting to $6.25 a share were paid on the Cumulative Convertible 5% Preferred Stock, of which $1.25 per share applied against arrearages. On March 29, 1941 the regular quarterly dividend of $1.25 a share and an additional dividend of $1.25 a share against arrears were paid, reducing the accumulation of unpaid preferred dividends to $10.00 a share at March 31, 1941.

Taxation

Taxes totaling $10,620,466 — local, state, federal and foreign — equivalent to $11.47 a share on the outstanding preferred stock, were provided for out of 1940 consolidated earnings. This compares with 1939 taxes of $3,808,970.

The 1940 total includes property taxes, social security taxes and other taxes not based on income amounting to $3,133,450 as compared to $2,993,709 in 1939. Taxes based on income amounted to $7,487,016 in 1940, taking 32% of the consolidated balance of earnings after all charges except such taxes, as compared to $815,261 taking only 14% in 1939.



IN 1940 THE COMPANIES' KRAFT PRODUCTION WAS DOUBLE THEIR NEWSPRINT PRODUCTION

Funded Debt

Funded debt at December 31, 1940 amounted to $57,571,280, a reduction of $4,973,330 from the corresponding figure at December 31, 1939. Of the $57,571,280 net amount, $5,498,751 is classified in the balance sheet under current liabilities, representing $4,579,751 of 1941 maturities and $919,000 to cover amounts required to meet sinking funds in 1941 in excess of the repurchased bonds on hand at the close of 1940.

Working Capital

Net working capital increased $4,608,357 during 1940. During the same period inventories increased $5,157,779 or 20%. Because of the Company's "last in, first out" policy of inventory valuation, this increase indicates an increase in

(Continued on page 18)

Enforced Sale of Abitibi Co. is Opposed

Bill Sponsored By Attorney-General Will Have Effect of Staying Proceedings Under Mortgage of Bondholders and Extends Moratorium — Excess Capacity of Newsprint Industry Is Discussed.

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., April 14, 1941—Another obstacle to the enforced sale of the assets of the Abitibi Power and Paper Company has been placed in the way of the bondholders' protective committee. Steps were taken in the Ontario legislature Monday to afford an opportunity for the recommendations of the government-appointed committee that investigated the affairs of Abitibi to be considered.

As reported last week, the chief recommendation of the royal commission was that the company be given a specified time to meet certain conditions. If these conditions are not met, the bondholders retain their right to take over the properties, but if they are met, the shareholders regain control and resume management.

Sponsors Bill To Stay Proceedings

Attorney-general Gordon Conant sponsored a bill in the legislature entitled "Abitibi Power and Paper Company, Ltd., Moratorium Act", which, if, as and when proclaimed will have the effect of staying proceedings under the mortgage of the bondholders' protective committee and will remain in force until December 31, 1942, unless terminated sooner by order-in-council. It does not necessarily preclude later action by the bondholders' committee, but enforces delay. It opens the way for fresh negotiations among the various interests, in the light of the royal commission's recommendations. The consent of the attorney-general will be necessary before any new action can be taken and no further step can be taken in any action already started without his consent.

When the royal commission under Mr. Justice McTague started hearings, the bondholders' protective committee headed by H. J. Symington agreed to postpone any further steps to bring about a judicial sale of the Abitibi assets. A sale which had been held in Oct., 1940, proved ineffective when the only bid received—that from the bondholders' committee offering $30 millions for the properties—failed to meet the Master's requirements for a reserve bid.

The committee then announced its intention of asking for a new sale to be held, this time without a reserve bid. The application for the new sale, made by the Montreal Trust Co. in late December of last year, was adjourned subject to renewal on seven days' notice.

When the Ontario government announced the appointment of the royal commission, it also announced that it had rescinded the order-in-council of March 9, 1939, under which the sale proceedings were taken.

New Legislation Extends Moratorium

The new legislation, "Abitibi Power and Paper Company, Ltd., Moratorium Act," thus extends the moratorium which has been in effect since the end of December, when the application of the Montreal Trust Company for a new sale was adjourned.

There is considerable variation in the reactions of the numerous parties interested in the recommendations of the royal commission.

Spokesmen for equity interests indicate their general approval of the commission's plan, as providing a workable basis for arriving at an agreement. They admit that the plan as outlined in the report is not complete. It leaves many gaps, but these are felt to be more a matter for working out of details than a failure to make clear an acceptable principle.

Feel That Danger Exists

These interests feel that a danger to premature default on the bond requirements exists in the working capital provision, requiring $10.5 millions working capital and providing that sums available above this amount be used to pay interest or redeem bonds. They also draw attention to the commission's failure to deal specifically with present accumulated arrears of interest. They point with satisfaction to the commission's reference to the existence of a possible equity for shareholders.

On the other hand, those close to the bondholders' committee can see little that looks good to them in the report of the commission. They interpret the commission's remarks anent the possible junior equity as failure to find that any equity exists.

Excess Capacity Discussed

A feature of the report of the royal commission that is being stressed in financial circles this week is the reference to the excess capacity of the industry for present newsprint requirements. The report states that the capacity of Canadian newsprint mills is far in excess of demand and points out that the annual capacity has increased from 3,389,000 tons in 1929 to 4,307,000 tons in 1940. The idle capacity during this period was greatest from 1930 to 1933 and since that time, except in 1936 and 1937, has approximated 30% of the entire Canadian capacity.

Existence of this spread between capacity of Canadian mills and shipments, the report goes on to say, means that in competition for business the mills are likely to slash their prices below the level at which operation can be profitable unless a policy of proration is pursued.

Difficult Position to Maintain

It was stated before the commission the proration of tonnage is a difficult position to maintain and that there are few industries in Canada operating at 75% of capacity. Where an industry operates at that level or more there is but slight incentive to cut prices, it was contended. Figures placed before the commission, however, disclosed that for a number of years production in the newsprint industry in Canada had been less than 70% of capacity.

The commission expressed agreement with the view expressed by G. T. Clarkson, receiver and general manager for Abitibi Power and Paper Company, that if proration is not maintained the industry will go back to the conditions existing in 1932 and 1933.

Wisconsin Uses More Canadian Products

Stoppage of Scandinavian Shipments Greatly Increases Imports of Wood Pulp and Pulpwood From Canada—Green Bay Mills Used Over 300,000 Tons of Canadian Pulp In 1940—Other News.

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., April 14, 1941—Canadian pulp and pulpwood have been utilized extensively by Wisconsin mills to make up for the cessation of exports from the Scandinavian countries. A report made by the United States Engineer's office at Milwaukee, Wis., notes greatly increased imports of Canadian tonnage. Specific mention is made of Green Bay, Wis., at the head of the Fox River Valley. There European imports of wood pulp were replaced by more than 300,000 tons from Canada. Imports there for the year 1940 were 100,000 tons greater than any previous year. Milwaukee, Manitowoc, Marinette and Ashland also had greater pulp imports.

May Clarify Pool Car Shipments

Protection is being sought for the Wisconsin Paper Group, Neenah, Wis., in connection with legislation proposed in Congress to regulate freight forwarders who assemble less-than-carload freight and make a charge to shippers for making up carload shipments that get a cheaper rate. The bill as originally written would affect the Wisconsin organization, a voluntary pool for carload shipping that operates without profit. Senator Alexander Wiley and Congressman J. L. Johns of Wisconsin, have proposed to the House interstate and foreign commerce committee that private operators joining together to get carload freight rates be exempted. Congressman Lea of California declared the bill was not intended to cover such pool car shipments, and declared that clarifying language would be considered.

Employees at Safety Meeting

Five hundred employees of the Kimberly-Clark Corporation's mill at Kimberly, Wis., attended a noon hour safety meeting at the mill clubhouse Wednesday of last week, in connection with a safety contest with the company's mill at Niagara, Wis. The contest ends at midnight July 31.

J. T. Doerfler, mill manager, spoke concerning the contest, urging veteran employees to help the new employees to practice safety and keep up the splendid record thus far made. The mill is divided into sixteen groups for the contest, and monthly prizes are awarded.

M. Wertheimer Estate Valued at $781,003

Property left by Monroe A. Wertheimer of New York City, late chairman of the board of Thilmany Pulp and Paper Company, Kaukauna, Wis., was appraised by the New York State Transfer Tax Department at $781,003 gross value, and $680,609 net. The bulk of the estate consists of $566,100 in Worth Corporation.

Mr. Wertheimer died March 1, 1939 at his New York home at the age of 76 years. He entered the paper business as a jobber in San Diego, Calif. Thirty-five years ago he purchased the Thilmany company and later established the Longview Fiber Company, Longview, Wash., of which he was also chairman of the board. He was also president of the American Lakes Paper Company, Chicago.

Property left by Mr. Wertheimer is placed in a trust fund from which his wife, Bess Wertheimer of New York, will receive $15,000 per year. The remainder of the income will be paid to a son, Robert.

Prof. Sweeney Gives Address

Prof. O. R. Sweeney, head of the department of chemical engineering at Iowa State College, spoke at a meeting of the Northeast Wisconsin section of the American Chemical Society at Lawrence College, Appleton, Wis., Monday evening, April 14. His subject was "Utilization of Agricultural Wastes and Its Relation to Segregation of Population." Prof. Sweeney was the guest at a dinner at the Candle Glow tearoom preceding the meeting.

C. B. Clark Elected

C. B. Clark, president of the Riverside Paper Corporation, Appleton, Wis., was elected vice-president of the Neenah Club, Neenah, Wis., at its annual meeting April 8. Charles H. Sage, vice-president of Kimberly-Clark Corporation, Neenah, and L. C. Stilp, also of Kimberly-Clark, were elected to the board of directors.

F. B. Whiting Appointed "Colonel"

Frank B. Whiting of Menasha, Wis., president of the George A. Whiting Paper Company and the Whiting-Plover Paper Company, now bears the title of "Colonel" Whiting. He was one of seven prominent men appointed last week by Julius P. Heil, Governor of Wisconsin, as honorary colonels on his military staff.

Simerl and Billings Nuptials

Dr. Linton E. Simerl, employed by the Mead Corporation, Chillicothe, Ohio, and Miss Martha Rodda, director of dormitories at Knox College, Galesburg, Ill., were married Friday, April 4, at Knoxville, Tenn. Dr. Linton received his Ph.D. degree at the Institute of Paper Chemistry, Appleton, Wis., in 1939. His bride formerly was dietitian at Lawrence College, with which the Institute is affiliated. Dr. Loren Foreman, also a graduate of the Institute, was one of the attendants.

The marriage of Richard Billings, chemical engineer for Kimberly-Clark Corporation, Neenah, Wis., and Miss Hazel M. Buckley, also of Neenah, took place Thursday of last week at the First Methodist Church at Neenah. The couple is spending a two weeks' honeymoon in the South.

Eaton Paper Co. Raises Pay

PITTSFIELD, Mass, April 14, 1941—Eaton Paper Company officials recently announced a 5 per cent wage increase for 500 employees, effective April 30. A one-week vacation with pay also was approved.

Paper Demand in Midwest Continues Upward

Increasing Orders Reported By Chicago Expected To Result In Substantial Gain In Sales Volume Before Long—Annual Packaging Conference At Stevens Attracts Interest—Other Late Market News.

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, Ill., April 14, 1941—The Chicago market this week reported additional impressive gains in the amount of orders and added pressure which sooner or later will result in definite upward trends. All grades, as far as reported statements can be estimated, are well up to list price with here and there sufficient combination of demand and cost to send the margin over the line. Waste papers were said to be unusually strong during the week. Krafts held firm to strong with buying said to be good and the raw material market securing added attention to the entire price situation. Sulphites moved into stronger demand as the Spring business period developed more widely. Books and covers likewise responded very favorably while boards were universally in an improved and strong situation.

Salesmen Announce Appointments

The western division of the Salesmens Association of the Paper Industry recently announced that Rev. Wallace Conkling, recently consecrated as Bishop of the Chicago Diocese of the Episcopal Church to succeed the late Dr. George Craig Stewart, has announced his willingness to serve as chaplain of the Salesmens Association. Dr. Conkling's predecessor, Dr. Stewart, had been chaplain of the Association for many years, a speaker at many of the paper industry meetings and a close friend of scores of paper executives. Dr. Conkling is expected to provide a similar contribution to the industry.

The local Sapeyes have also announced standing committee personnel for the year with George K. Gibson selected to serve as the National membership chairman. F. X. Meiners will serve as western division chairman. Other appointees in the western division are Jack T. Burruss as chairman of the Educational Committee; Ben K. Babbitt, chairman of the Social Committee of both the Western and National set-up, and Hugh Phillips, chairman of the important Special Committee on Placement Service to which the organization expects to give considerable attention in months to come.

Sabin Robbins Adds Space

A relatively small but significant addition to storage space has been announced by the Sabin Robbins Paper Company with the Chicago branch at 2719 S. Troy street, adding a space of 36 x 50 feet to its already well developed facilities. The cost is reported to be about $5000.

Packaging Conference Attracts Interest

The Eleventh Annual Packaging Conference, held at the Stevens Hotel this week, attracted a great deal of attention because of improved business conditions and because of the significant pattern set by the exhibitors. Included in the many exhibits of paper, metal, plastic and glass containers were indications that the U. S. Army and the housewife are expected to do a good deal of container purchasing during the next year. The defense program is obviously having a definite effect on the packaging industry, because of the aluminum shortage. Increased consumption of paper to be made into paper and composition containers is forecast.

Two speakers had especially interesting comments for the paper industry. One, A. W. Luhrs, president of the Container Testing Laboratories, pointed out the need for care in developing containers for army use because of the many climatic differences in various regions occupied by army forces. Another, R. W. Marquis, said that a decreased use of wood is not the proper means of conserving lumber supplies.

Murnane Paper Co. Moves

The Murnane Paper Company announces that due to increase in business they have moved to new and larger quarters at 700 West Lake street, Chicago. The telephone number remains the same, Haymarket 0812.

Roy Jones Forms New Company

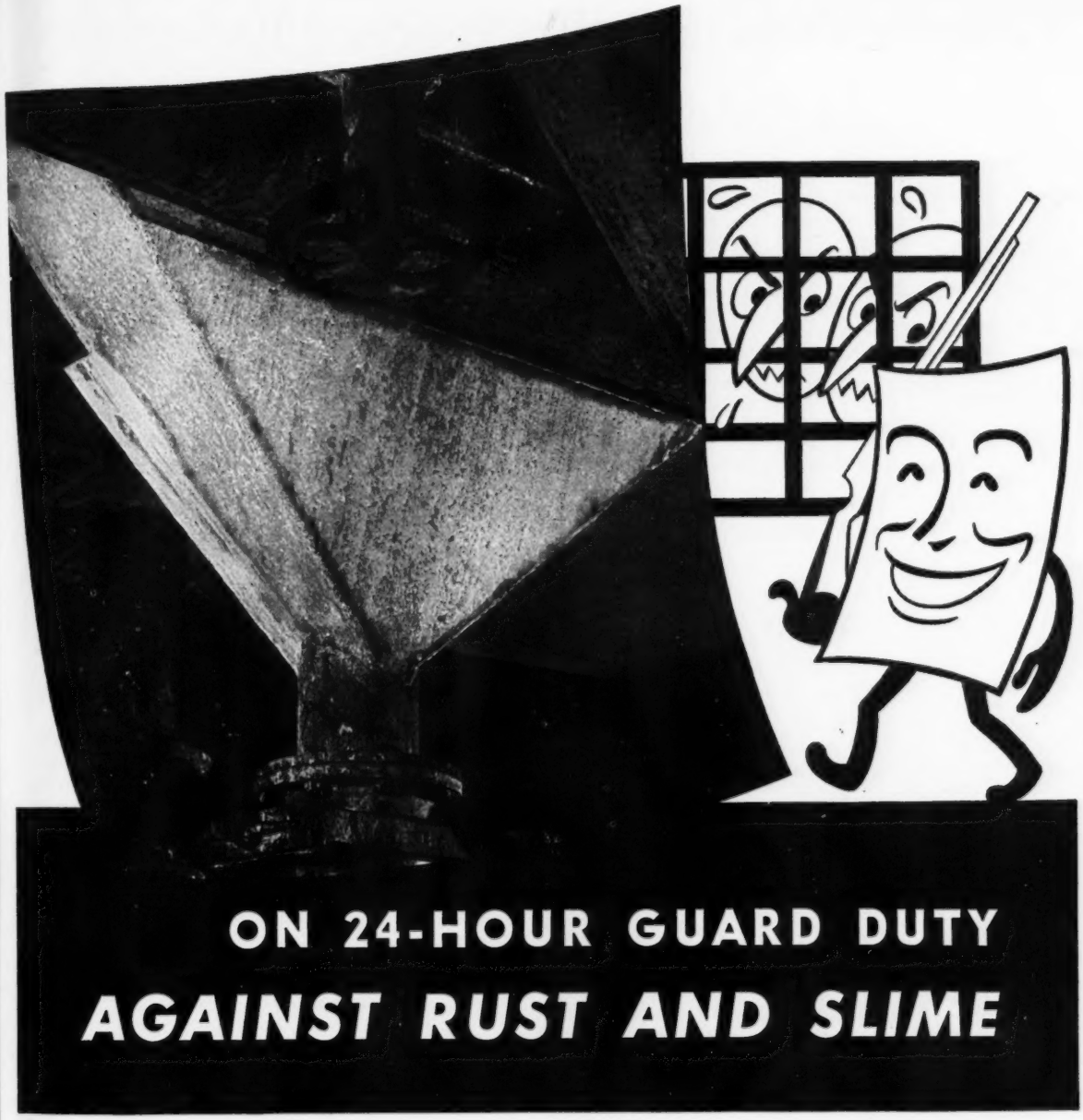
The Conway Building, generally known as the headquarters for the local paper industry, had a new tenant this month in the form of the R. E. Jones Paper Company, dealing in fine and wrapping papers. The head of the new concern is Roy Jones, for nearly ten years president of the Hobart Paper Company and affiliated with Hobart for nineteen years. Reports also state that P. H. Oliver has been elected the new president of the Hobart Paper Company with A. A. McDonough as vice president and treasurer and R. W. Weeks as secretary.

Protest Rate Changes

J. E. Bryan of Chicago, general traffic manager of the Wisconsin Paper and Pulp Manufacturers Association, was in St. Louis this week opposing a proposal for a 34 cent rate on printing paper other than newsprint from Houston, Texas, to Chicago. The proposed rate compares with the present applicable basis of 56 cents a 100 pounds on minimum carloads of 40,000 pounds. It was indicated by the protesting groups, including Mr. Bryan, that if the southwestern lines proceeded with arrangements for publishing of the 34 cent rate, they would actively oppose granting by the Commerce Commission of necessary fourth section relief.

Arnold-Roberts Co. Adds Lines

BOSTON, Mass., April 14, 1941 — The Arnold-Roberts Company has a number of new lines including the Pastelle Strathmore, a text and cover, made by the Strathmore Paper Company, West Springfield, Mass.; Regency Cover, a product of the District of Columbia Paper Mills, Inc., Washington, D. C.; Spotlight Cover, made by the Wheelwright Paper Company, and Clearweave Bond.



ON 24-HOUR GUARD DUTY
AGAINST RUST AND SLIME

Inside and out, this important vat connection stands guard day and night. Bacteria and water beat a steady attack on the inner walls. Steam condenses outside. Yet ARMCO Stainless Steel fights rust and slime to a standstill.

The hard smooth surface of ARMCO Stainless performs yeoman service in this "key" vat. It assures steady velocity of flow because there are no tiny crevices to give bacteria a chance to settle. This is why slime growth and accumulation are retarded. And given just ordinary care this durable metal won't rust.

Studies conducted in the industry show slime costs are high in the average mill. It accumulates on head-boxes, in under-current vats, in stuff chests, flumes, filter vats and around paper machine wire section.

Think what ARMCO Stainless Steel equipment could mean to your production. Clean pulp becomes clean paper. Rust spots are out. There are fewer breaks, fewer rejects too —and this all means more profit. The American Rolling Mill Co., 1551 Curtis St., Middletown, Ohio.

ARMCO ARMCO **STAINLESS STEELS**

Graphic Arts and the National Emergency

Fourth Annual Eastern Seaboard Conference of Graphic Arts Industry Will Be Held April 25 and 26 At Hotel Traymore, Atlantic City, N. J. — Important Subjects To Be Discussed — Other News.

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., April 14, 1941—Judging from the interest that is being manifested on the part of paper trade executives here, the Fourth Annual Eastern Seaboard Conference of the Graphic Arts Industry which is to be held at the Hotel Traymore, Atlantic City, on April 25 and 26, will exceed its quota of representatives from that industry. William A. Meeks, manager of the Typothetae of Philadelphia, Inc., states that "The theme of the Conference is to be 'The Graphic Arts and the National Emergency'." That is a big subject to be covered in two days, but from a careful perusal of the highlights of the program it will readily be seen that every man in the industry, whether paper merchant, printer, typesetter, typographer, bookbinder, roller maker, ink manufacturer, electrotyper, photo engraver, machinery manufacturer, or any other branch of the Graphic Arts Industry can learn something to his advantage.

Experts Will Talk on Current Problems

"There are today," continued Mr. Meeks, "more than 130 federal agencies issuing regulations for business. These agencies have issued more than 5,000 regulations to date. No man can hope to be an expert on all these so he must turn to others who are experts in their particular calling in order to keep up with the procession and still keep out of trouble. All these affect management, and whether it be sales, costs, estimating, production, or some other question, management is primarily responsible for the success or failure of individual concerns, and it behooves all those in the afore-mentioned industries to attend this conference.

" 'Management Problems' is to be handled by a man whose organization extends over the entire United States, and his information is based on what he and his representatives see as they travel from coast to coast.

"The subject of 'Public Relations Problems' certainly deserves a lot of thought and serious consideration today, and the man who will discuss this subject is an expert in his line.

Will Discuss Economic and Labor Relations

"With high taxes, high wages, strikes, and the multitude of problems confronting management these days, there is a lot to be said and done regarding 'Economic and Labor Relations.' This is surely a complicated problem for the average layman, and there is not a doubt in my mind but that we can all be helped very materially on this phase that we are all confronted with today.

"Then there is to be the presentation and distribution of the report of the Graphic Arts Unity Committee on Friday afternoon.

"When evening arrives the much needed relaxation and entertainment mixed with a sumptuous meal will be provided. On Saturday morning, Harry L. Gage, vice president, Mergenthaler Linotype Company, who always has something of interest to say, will discuss 'Cross-Currents and Trends in the Graphic Arts', and this should send us all home with plenty to think about.

"There will also be a symposium in which leaders in the various branches of the industry will participate. Discussion from the floor will follow their introductory remarks."

Registration fee is $4.00 per person and can be made through The Typothetae of Philadelphia, Ledger Building.

Golf Tournament Set for May 21

The date for the golf tournament of the Philadelphia Paper and Cordage Association, to be held at Philadelphia Cricket Club with Butler Smythe of J. L. N. Smythe Company as host has been changed to May 21. This is the only tournament held in these parts which is one hundred per cent represented by officials from paper houses, and whether they play golf or not they always attend this tournament, some of them arriving in time for the dinner and the good comraderie that can always be counted on when Butler Smythe is host.

Mutual Paper Co. Buys Building

The Mutual Paper Company, paper and twine distributor, purchased the six-story and basement building at 510-14 West 27th street, New York, from the Radley 27th Street Realty Company, which has owned the property for about twenty years. The buying company has been located at 129 Greene street for about thirty years. The building on 27th street has been under lease to the West Virginia Pulp & Paper Company for the last ten years and is assessed for $142,000.

Spear & Co., brokers in the deal, have been appointed agents by the Mutual Paper Company for the 129 Greene street property.

Explosion Damages Institute Lab.

APPLETON, Wis., April 14, 1941—An explosion of undetermined origin Sunday afternoon wrecked two walls and the ceiling of the students' laboratory at the Institute of Paper Chemistry, causing fire and water damage to building estimated at about $4,000. No estimate of expensive equipment list has yet been made. Operations will be uninterrupted and immediate repairs will be made according to Westbrook Steele, executive director.

Watermark of Anniversary

In connection with the fiftieth anniversary celebration of Fred Kranhold, reported in the March 20 issue of the PAPER TRADE JOURNAL, an interesting souvenir was made.

This consisted of a hand-made sheet of paper bearing a watermark of the honored man's name, date and the words, "in paper" with Kimberly-Clark Corporation. The watermarking was made by the Joseph J. Plank Company in conjunction with Wm. C. Nash & Sons.

THE MOTOR YOU ASKED FOR IS STRONG ON PROTECTION

New G-E TRI-CLAD MOTOR

1

Extra Protection

AGAINST PHYSICAL DAMAGE

A truly modern motor must withstand accidental blows, flying chips, dripping liquids, and occasional bumps in moving or mounting. We built the Tri-Clad motor to meet such threats of damage!

We made the frame and end shields of cast iron, using channel and rib sections for strength without excessive weight or bulk; we cast the sturdy, rigid feet integrally with the frame. We completely enclosed the upper portion and carefully baffled all ventilating openings to protect vital motor parts. The bearings have dust-tight cast-iron housings. And the finishing touch—we gave the motor a tough coat of paint to protect against rust and corrosion.

The Tri-Clad motor is fully protected against the accidental ill-treatment some motors encounter all the time, and which *all* motors encounter some of the time. As a safeguard against production interruptions, as a prime factor in lowering costs, as an extra increment of value on machines you build, this new motor means extra profit protection, too.

Make your next induction motors Tri-Clad. General Electric, Schenectady, N. Y.

BUILT FOR PROTECTION FIRST . . . . . TO LAST

2

Extra Protection

AGAINST ELECTRICAL BREAKDOWN

New stator windings of Formex wire give extra protection internally against moisture, oil, abrasion, and heat aging. New synthetic impregnating and protecting varnishes make a rigid unit with a hard finish.

3

Extra Protection

AGAINST OPERATING WEAR AND TEAR

Sleeve bearings of new design have long life and great load capacity because of new proportions and oil distributing system. The one-piece cast-aluminum rotor winding, with fans cast integrally, is practically indestructible.

GENERAL ELECTRIC

Special Finishes on the Paper Machine With Wet End Embossing Rolls

By Robert H. Schmitt[1]

One of the more recent developments in the finishing of paper is the reproduction of fabric effects directly on the paper machine, with a rubber design roll. By using this type of roll, it is possible to produce finished paper with a surface ranging from a fine sand-like finish to the coarsest of patterns imaginable. These rolls also are used to cover up certain objectionable marks or to give both sides of the sheet a uniformity of pattern, which hitherto has been very difficult due to felt and wire marks.

Wide Variety of Patterns Possible

Any pattern can be reproduced and duplicated at any time by using rubber design rolls. Paper mills that may have had the problem of furnishing a felt finished paper and upon reorder have been unable to duplicate the first run, because of any one of the problems ever present with felt marking, will find rubber design rolls valuable. By the use of a rubber design roll, it is always possible to produce the same mark from the first day they are installed until the pattern is discontinued.

Wearing Qualities

This justifiably brings up the question of how long they will wear. In the past five years, since the first installation of this type roll, not one, to the writer's knowledge, has been returned to have the design replaced because of wear. This, tells its own story as to wearing qualities.

Our company has had several reorders of designs where the paper manufacturer wished to duplicate the same pattern on one or more of his paper machines. While it might be expected that it would not be possible to duplicate the finishes on two machines, the results are very close. However, it is not suggested that this is a panacea for obtaining the same results on machines of widely different characteristics.

With marking felts, the patterns are of necessity limited to the craftsmanship, materials, and machinery at the disposal of the textile weavers. With rubber embossing rolls, the patterns are unlimited, ranging from the texture of cloth, brick, sand and leather, to wood grains and sculptured surfaces or a super-imposition of one or more.

Uses and Results

So much for the uses and results to be expected from these rolls. Now let us outline the installation itself. Rubber embossing rolls can be used either singly i.e. a design running against (1) a metal roll, (2) a plain soft rubber roll, or (3) another design roll. They are usually placed in the smoothing or third press position, depending upon the particular installation in question.

In some instances where a manufacturer produces a variety of different finishes, it has proven more economical to run these design rolls in a three roll stack. This permits the use of rolls of smaller diameter than if the stack is not employed, with consequent savings in the cost of these smaller rolls.

The roll itself is made of a cast-iron core. In order not to make the wall of iron too heavy, provisions are made to load this roll with lead shot or sand; hand hole openings being placed in the ends to accomplish this, obtaining even loading over the entire face.

Constant Research Being Carried On

This method of paper finishing on the wet end of the paper machine, while a comparatively recent development, has proven to be successful and constant research is being carried on to further improve the roll. We look forward to a greater use of rubber rolls for wet and embossing to obtain a duplication of a particular finish throughout many runs, and an improvement in types of finishes now obtainable. A wider variety of patterns are made available together with a more economical production cost, as the fancy finished paper comes out of the paper machine onto the reel ready for sale without reduced machine speed or a second handling cost.

[1] Rubber Printing Products Div. American Wringer Co., Inc., Woonsocket, R. I.

Paper Specifications Committee Meets

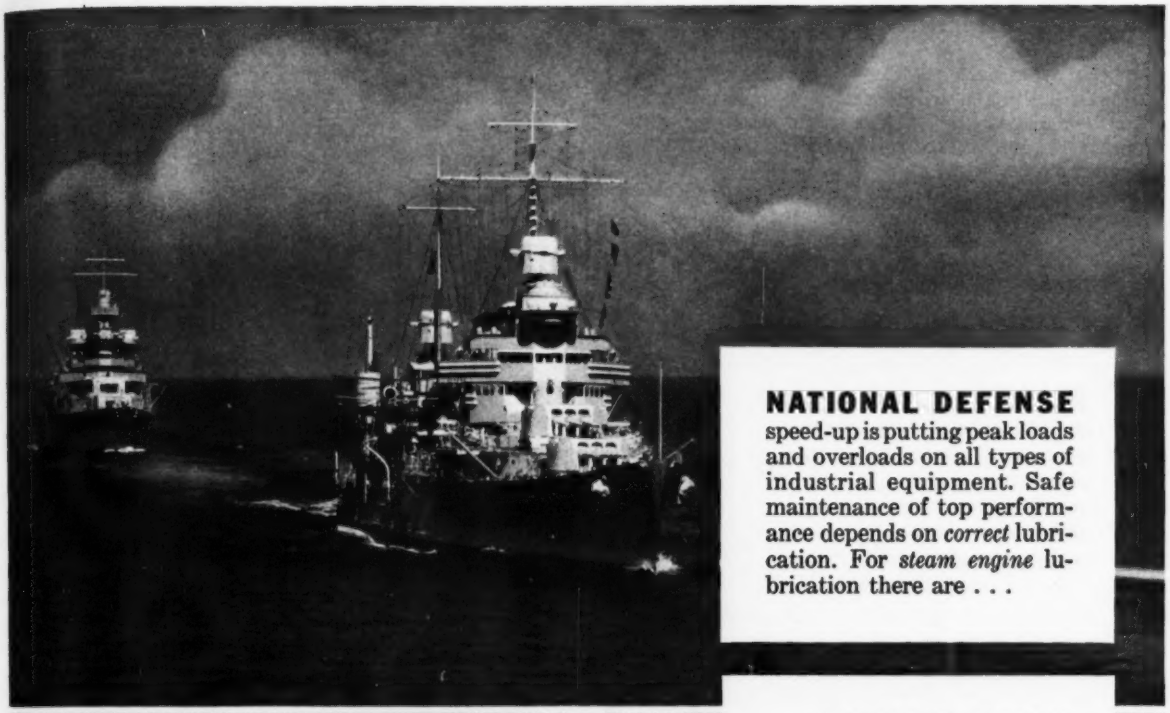
[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., April 16, 1941 — Paper Specifications Committee has met and made its report on specifications for paper for the use of the Government Printing Office for the six months' period beginning July 1, next. It is unofficially reported that few changes in specifications have been recommended. Joint Congressional Committee on Printing will meet in the near future to accept the recommendations and set a date for opening the bids.

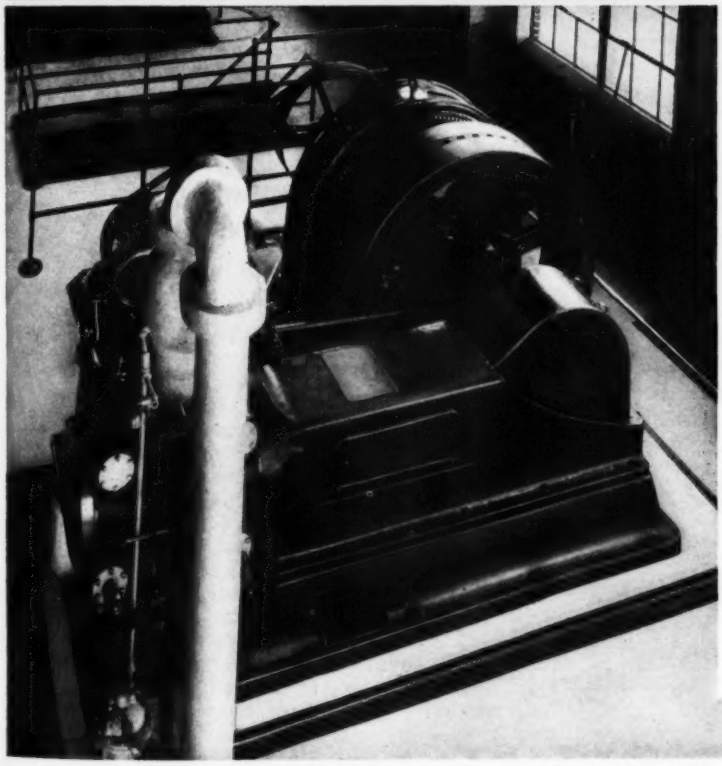
It is reported that May 19 will be recommended as the date for opening the bids for the six months beginning July 1 and May 26 as the meeting for awarding contracts. However, this has not yet been officially approved by the Joint Congressional Committee on Printing. Quantities of paper are not available for publication at this time but it is assumed that more paper will be needed for the new six months' period than in the past due to the additional needs of the government during the present emergency.

Strike Closes Continental Mill

A press dispatch from Ridgefield Park, N. J., under date of April 10 says that the Continental Paper Company plant closed down when its 360 employes, members of the United Paper Workers Union, CIO, walked out because of the alleged refusal of the company to bargain with the union. Orderly picketing was started.



NATIONAL DEFENSE speed-up is putting peak loads and overloads on all types of industrial equipment. Safe maintenance of top performance depends on *correct* lubrication. For *steam engine* lubrication there are . . .



. . . SINCLAIR STEAM CYLINDER and **VALVE OILS** designed for the full range of speeds and loads of engine operation. These oils meet every requirement under the varying temperatures, pressures, and moisture content of steam. They promote sustained peak performance at low maintenance and low lubrication costs. For lubricating advice or additional information, write the nearest Sinclair Office or Sinclair Refining Company, 630 Fifth Avenue, New York, N. Y.

* * *

(*Left*) **CHUSE** *steam engine in power plant of Colorado General Hospital, Denver. Sinclair lubricated.*

Write for "The Service Factor"—a free publication devoted to the solution of lubricating problems.

SINCLAIR INDUSTRIAL OILS

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INTERNATIONAL PAPER REPORTS $15,696,577

(Continued from page 9)

physical volume of inventories, since increases in raw material prices and in manufacturing costs of finished products are substantially absorbed through current costs. Under present conditions a reasonable increase in inventories, both of finished products and of raw materials, is desirable in view of a larger volume of business and the possibility of delays in replacing some materials.

Cash balances at December 31, 1940 totalled $18,031,824, of which $5,556,588 (in terms of U. S. dollars) represented balances of Canadian and foreign subsidiaries which for the most part are subject to exchange restrictions. Cash balances of the Company and its United States subsidiaries increased $8,460,011 during 1940.

Foreign Sales and Assets

During 1940 about 19% of tonnage sales were for export to countries outside of North America. Practically all such export sales were on the basis of U. S. or Canadian dollars. Cash and receivables in other currencies at December 31, 1940 amounted to less than $450,000 in equivalent U. S. Dollars.

The policies adopted by the Company in dealing with the accounts of foreign subsidiaries were outlined in the 1939 annual report and are explained in detail in the notes on pages 20 and 21 of this report. In the consolidated balance sheet the net working capital of foreign subsidiaries and the net additions to their capital assets during 1940 have been converted into equivalent U. S. dollars at the official rates established by the Canadian Foreign Exchange Control Board.

Paper Industry Conditions

The high level of general business activity and the increasing use of paper products — particularly bleached kraft paper and kraft container board—in new fields combined to make 1940 the record year in United States paper production.

The high level of production has not resulted in paper inventories which are regarded as excessive. Mill stocks of all grades of paper at December 31, 1940 were only slightly higher than at December 31, 1939. Aggregate mill and publisher stocks of newsprint paper in North America at the close of 1940 were practically the same as at the close of 1939.

	1940	*1939*
UNITED STATES:		
Kraft board (unbleached)	673,019	509,287
Kraft wrapping and bag paper (unbleached)	191,753	171,058
Bleached kraft paper and board	109,420	80,667
Unbleached kraft specialty papers	64,945	47,496
Kraft pulp for sale	108,742	41,674
Total kraft—board, paper and pulp	1,147,879	850,182
Groundwood specialty papers	187,076	171,567
Book and bond papers	117,393	121,167
Other pulp and paper grades	66,358	51,596
Total United States	1,518,706	1,194,512
CANADA:		
Newsprint	540,851	434,383
Sulphite pulp	215,444*	140,025*
Total Canada	756,295	574,408
Total	2,275,001	1,768,920

* Sulphite pulp production includes tonnage shipped to Company's northern U. S. mills for their own use amounting to 53,961 tons in 1940 and 23,114 tons in 1939.

Operations

During 1940 the subsidiary companies produced a total of 2,275,001 tons of paper, paperboard and pulp as compared with 1,768,920 tons in 1939, an increase of 28%. The tonnage figures by grades for 1940 and 1939 in the table presented herewith have been compiled on a slightly different basis than those in reports for previous years, chiefly in that they do not include production of bags and other converted items manufactured from paper produced at other mills of the companies.

The International Paper and Power Company mills are in a position to produce an excess over all of the pulp required for their paper manufacturing operations.

No new mill construction was undertaken in 1940 but during the year additions aggregating $8,684,427 (net) were made to properties and intangibles, including acquisition of the properties and intangibles of Agar Manufacturing Corporation and subsidiaries described below.

Agar Manufacturing Corporation

In December, 1940 International Paper Company acquired the entire capital stock of Agar Manufacturing Corporation, which with its three wholly owned subsidiaries owns and operates four modern shipping container plants (located at Whippany, N. J.; Somerville, Mass.; Chicago, Ill. and Kansas City, Kans.) with an aggregate capacity of 150,000 tons yearly. For many years Agar Manufacturing Corporation has been International's largest customer of kraft liner board and kraft corrugating material and recently has been purchasing its entire requirements of these products from International.

Disposition of Utility Holdings

As stated in previous annual reports, the common shares and Class B shares of International Hydro-Electric System previously held directly by International Paper and Power Company and International Paper Company, were transferred under date of January 31, 1939 to Liquidating Trustees. Both the Trustees and International Hydro-Electric System then registered as holding companies under the Public Utility Holding Company Act of 1935.

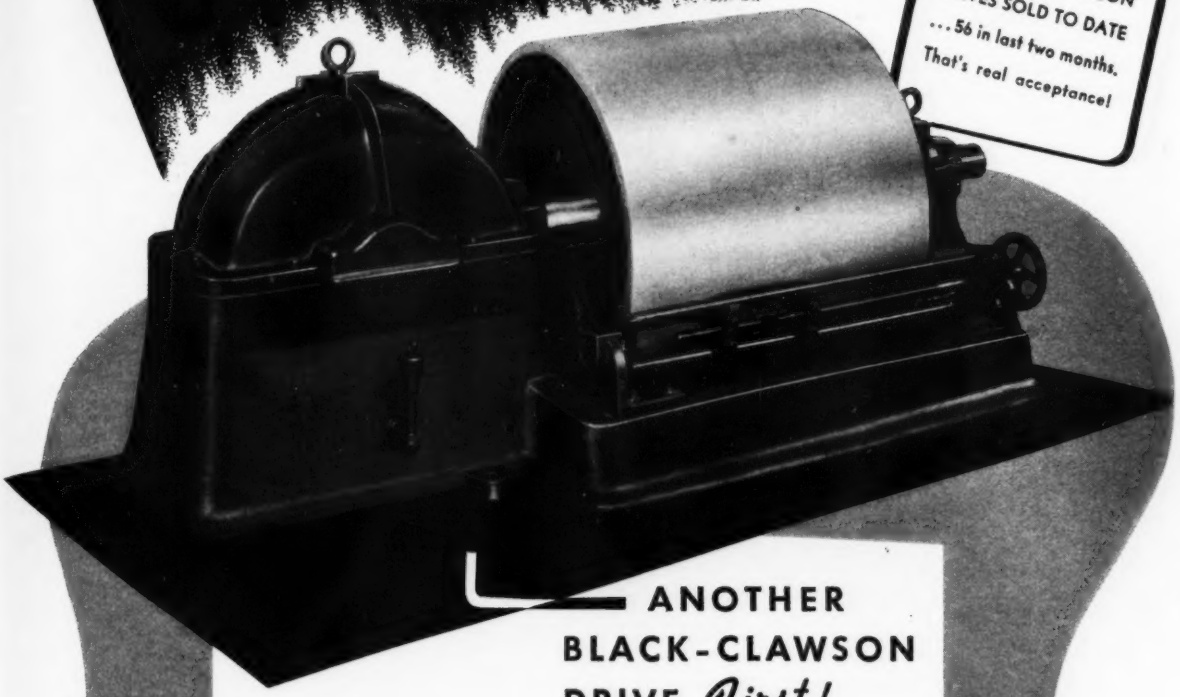
In January, 1941, the Securities and Exchange Commission issued an order under this Act directing the surrender to International Hydro-Electric System, for a consideration not in excess of one dollar, of all the common shares and Class B shares of International Hydro-Electric System held by the Liquidating Trustees. International Paper Company has directed the Trustees to comply with this order.

As both International Paper and Power Company and International Paper Company wrote off the entire investment in these shares as of December 31, 1934, such surrender will involve no change in their earnings or surplus.

In addition to these shares of International Hydro-Electric System the Trustees are holding in the trust the stock of Oconto River Power Company (which has sold its properties and is to be liquidated) and the stock and certain indebtedness of Olcott Falls Company.

TOTALLY ENCLOSED BEARINGS

607 BLACK-CLAWSON DRIVES SOLD TO DATE ...56 in last two months. That's real acceptance!



ANOTHER BLACK-CLAWSON DRIVE *First!*

- Black-Clawson drives used to have bearings partially exposed. Not that there was anything wrong with that arrangement, for there wasn't. But occasionally, an over-ambitious mill hand would tinker with these bearings, erroneously thinking he was helping out the adjustment.
- Invariably he made matters worse, for Black-Clawson drives are permanently adjusted even before they leave the shops.
- Now, the bearings are totally enclosed. They are sealed . . . inaccessible to "tinkerers" . . . tamper-proof. There's nothing on which you can stick a wrench.
- It's basic improvements such as this that make the Black-Clawson the finest paper mill drive. 56 have been sold in the last two months for a grand total of 607. A drive with such acceptance is the drive for you.

The Black-Clawson Company, Hamilton, Ohio.
Shartle Division, Middletown, Ohio.
Dilts Division, Fulton, N. Y.

BLACK-CLAWSON DRIVES

Byron Weston Co. Changes

DALTON, Mass., April 14, 1941—Following the death of Brenton C. Pomeroy, late president of the Byron Weston Company, the stockholders and directors have elected John H. Bellows to the office of vice-president and treasurer in charge of the company and appointed Robert Crane a member of the board of directors.

Mr. Bellows has been associated with the Byron Weston Company since September, 1902, when he entered the manufacturing department of the mill. During these 39 years of continuous service, Mr. Bellows has filled many important positions in the organization. Having served as production manager for ten years, he was elected a director in 1934 and the same year was appointed to the office of assistant treasurer. Following the death of Mr. Donald M. Weston in 1939, Mr. Bellows became treasurer and clerk of the corporation.

Mr. Bellows was born in Kinderhook, N. Y., October 15, 1877 and moved to Dalton with his parents in 1886. He attended the Dalton Public Schools and is a graduate of Kimball Academy, Meriden, N. H., class of 1898.

As vice-president in charge of the company, Mr. Bellows will continue the duties and office of director and treasurer.

Robert Crane, who was elected a member of the board of directors, was appointed secretary of the company as well as manager of sales in 1940. He will serve in all of these capacities.

The Byron Weston Company has been engaged for seventy-eight years in the manufacture of fine papers. Their present line consists of a complete line of cotton fibre content Ledgers, Bonds, Index Bristols and Specialties and is well known to the trade.

Fort Wayne Builds Branch Plant

Construction of a $300,000 branch plant and warehouse for the Fort Wayne Corrugated Paper Company has been started in Stowe Township, Pa., by the Austin Company, engineers and builders, who designed the structure. It is scheduled for completion by July 1, when the company's Western Pennsylvania sales headquarters will be transferred to the new location.

The building, which will have an area of approximately 83,000 square feet, will be of the monitor type with continuous side wall and monitor sash. It will include a 320-foot enclosed railroad siding and a large enclosed truck loading dock, boiler plant and compact office layout. Two hundred and fifty tons of structural steel required for the project will be shop welded.

Safety Paper used for Bacardi Rum Labels

A new use for safety paper as a means of protecting consumers of distilled spirits was announced last week by Jose Bosch, vice president of the Bacardi Corporation of America. Labels used henceforth on Bacardi Amber Label rum, he explained, would be lithographed on paper chemically devised for protection against counterfeiting, and embodying the Bacardi trade mark. Mr. Bosch said that safety paper, which to his knowledge has not previously been used for this purpose, would soon be adopted for other Bacardi products which are distributed in the United States by Schenley Import corporation.

Sherman Presents Packaging Line

For the first time, the Sherman Paper Products Corporation, Newton Upper Falls, Mass., presented its complete line of products at the National Packaging Exposition held this year in Chicago. Its exhibit emphasized the natural association of the three functions of the product package packing for shipment, and point-of-purchase display.

Outstanding among the new products presented by the Packaging Division was a one-piece tray for cakes, combining a colored corrugated tray, with printed top band for the dual purpose of product identification as well as preventing the cellophane wrapping from coming in contact with cake frosting.

In the Corroflex Division, a continuous Speed-Packing demonstration was staged, presenting new methods of packing for shipment, covering a wide range of product types. A new waterproof Corroflex was introduced to shipping men, which combined flexible cushion with a duplex, asphalt-center backing material.

The Display Division rounded out the exhibit with presentations of new materials for point-of-purchase use. A model, retail store window displayed many of the winning packages in the national awards, in settings designed to demonstrate the scope of its new display materials.

B. C. Plants Millions of Trees

One million trees a week are being planted by the forest service in the British Columbia Government's big reforestation program and with work now at its peak three hundred men are employed. Planting started during February at Campbell River and Skutz Falls on Vancouver Island, at Bowser, in the Nanton Lake area south of Powell River, and early in march at Great Central Lakes, Vancouver Island. Six million trees will be set out in these areas and the work will all be completed by mid-April.

Douglas fir predominates in the plantings with small percentages of hemlock, western cedar, balsam and spruce. The planting stock comes from the Green Timbers Nursery, south of New Westminster.

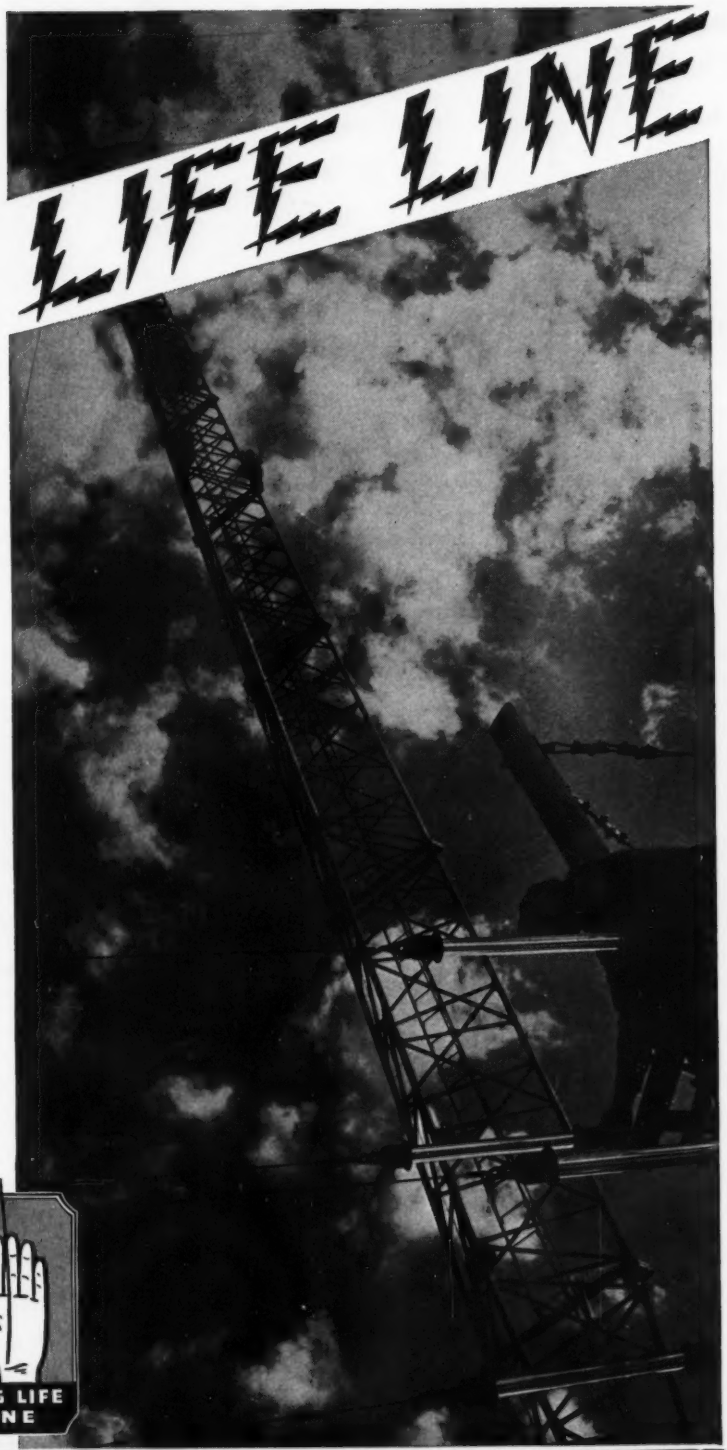
While the forest service is concentrating upon the reproduction of native trees that have already established their commercial values in British Columbia, diversification of the forest crop of the future is being studied.

New Paper Mill for India

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., April 9, 1941—Plans have been formulated for the construction of a paper factory in the State of Baroda, India, according to an article published in an authoritative Bombay trade journal, says the Forest Products Division, Department of Commerce. The new enterprise will have the cooperation of the Baroda government, which has leased to the company involved 5,000 acres of Forest Department land for production of bamboo and other necessary raw materials. The company will be permitted to import into the State duty-free all necessary machinery, raw materials, chemicals and other items used in operating the plant. It is expected that the new paper plant will give employment to approximately a thousand workers, the trade report states.

Wood's LIFE LINE



Stabbing the ether with globe-girdling impulses, this 718 foot antenna transmits a mighty line of communication —entertainment, music, news! It's a line depended on by hundreds of thousands for keeping up with the world.

In transmission of another kind—power—it's Wood's line of equipment that is depended on for long life, trouble-free service.

Built on service records from more than 80 years, Wood's Products have become in many plants the standard for judging all such equipment.

By delivering the maximum in economy, efficiency and long service life, Wood's Products will pay their way in your plant. Investigate now . . . it's to your advantage!

T. B.

Wood's

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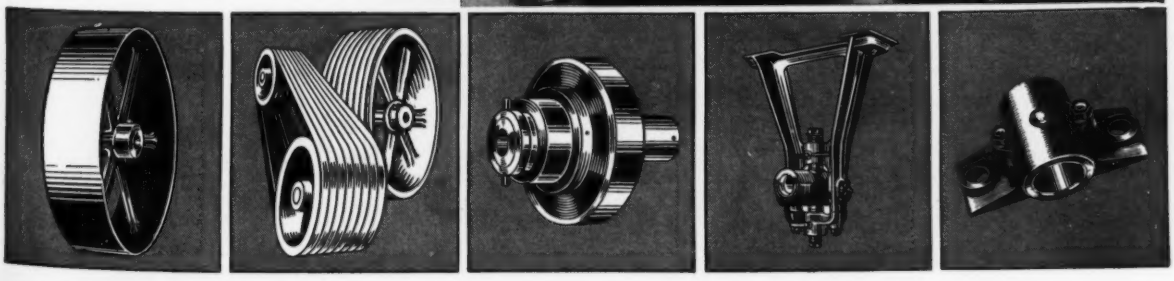


FINANCIAL NEWS

New York Stock Exchange

High, Low and Last for Week Ending April 16, 1941

	High	Low	Last
A. P. W.	....	....	....
Armstrong Cork Co.	27⅞	27¼	27½
Celotex Corp.	9¼	8¾	9¼
Celotex Corp., pf.	68⅛	68	68
Certain-Teed Products Corp.	3⅜	3¼	3¼
Certain-Teed Products Corp., pf.	26¼	25	25
Champion Paper & Fibre Co.	18	18	18
Champion Paper & Fibre Co., pf.	105	105	105
Congoleum-Nairn Co.	15⅜	15⅜	15⅜
Container Corp. of America	13⅜	13½	13⅜
Continental-Diamond Fibre Co.	8	8	8
Crown-Zellerbach Co.	12⅛	11¾	11⅞
Crown-Zellerbach Co., pf.	86	85¼	85¼
Flintkote Co.	12¾	12¼	12½
Robert Gair	1⅜	1¼	1⅜
Robert Gair, pf.	16	15⅞	16
International Paper & Power	13½	12⅞	13½
International Paper & Power, pf.	63½	60⅝	62¾
Johns-Manville Corp.	57¼	55	55½
Johns-Manville Corp., pf.	126	125½	126
Kimberly Clark Corp.	30	29⅝	29⅝
MacAndrews & Forbes	28	28	28
MacAndrews & Forbes, pf.	....	....	....
Masonite Corp.	22¼	21¾	21¾
Mead Corp.	7½	7⅜	7½
Mead Corp., pf.	74	72½	72½
Paraffine Companies, Inc.	....	....	....
Paraffine Companies, Inc., pf.	....	....	....
Rayonier, Inc.	12⅝	12⅜	12⅝
Rayonier, Inc., pf.	25	25	25
Ruberoid Co.	17⅛	16½	16½
Scott Paper Co.	....	....	....
Scott Paper Co., pf.	110½	110½	110½
Sutherland Paper Co.	21	20½	20¾
Union Bag & Paper Corp.	11¼	10½	10⅝
United Paperboard Co.	2⅞	2⅝	2⅝
U. S. Gypsum Co.	59⅝	58	58
U. S. Gypsum Co., pf.	172	172	172

New York Curb Exchange

High, Low and Last for Week Ending April 16, 1941

	High	Low	Last
American Box Board Co.	....	....	....
Brown Co., pf.	....	....	....
Great Northern Paper	40	39½	39½
Hummel-Ross Fibre Corp.	5⅜	5⅛	5⅜
National Container Corp.	11⅞	11⅜	11¾
St. Regis Paper Co.	2	1⅞	2
St. Regis Paper Co., pf.	81	80	80¼
Taggart Corp.	2¼	2⅛	2⅛

St. Regis Elects Directors

R. K. Ferguson, president of the St. Regis Paper Company, announced that the annual meeting of stockholders of the St. Regis Paper Company was held April 11, in the Woodruff Hotel, at Watertown, N. Y.

The following directors were reelected for the ensuing year: F. L. Carlisle; W. K. Dick; R. K. Ferguson; H. S. Lewis; H. E. Machold; R. B. Maltby; C. B. Martin; C. E. Norris; B. B. Taggart; W. H. Versfelt.

The stockholders approved an amendment to the by-laws of the corporation increasing the number of directors from ten to fourteen and the following individuals were elected to fill the places created by this action. Ossian Anderson, Bellingham, Washington, president, Puget Sound Pulp and Timber Company, vice-president, St. Regis Paper Company; J. O. Bulkley, Head of Bulkley, Dunton & Co., New York, pulp dealers; W. J. Dixon, vice-president and secretary, St. Regis Paper Company; and E. R. Gay, vice-president, St. Regis Paper Company.

Mr. Ferguson indicated that the volume of business of the Company and subsidiaries for the first quarter of 1941 increased 45% over the first quarter of 1940 and that net income for the first three months of 1941 was running substantially above the 1940 rate. However, in this latter connection no provision has been made for the higher corporate income tax rates which are expected to prevail on 1941 corporate incomes.

The corporation has been able to reduce further its bank loan during the first quarter in the amount of $500,000, leaving a total of $4,000,000 at March 31, 1941.

The outlook for the business of the corporation during the remainder of the year appears favorable. Continued heavy demand for pulp and paper products by reason of increased business activity is enabling the entire paper industry to operate at an average rate over 90% of productive capacity. Paper prices, which generally have not yet reflected higher operating costs, are showing firmer tendencies. The pulp and paper industry is cooperating wholeheartedly with the various government agencies in the furtherance of the National Defense Program.

Union Bag Profits Up

At the annual meeting of the Union Bag and Paper Corporation held in Jersey City, April 8, Alexander Calder, president, stated that estimated net income of the corporation for the first three months of 1941, after all charges including provision for estimated Federal taxes amounted to approximately $552,000, compared with net income of $491,000 in the same period of 1940, refigured to conform with present day tax charges, etc. Sales totaled $6,126,000 in the first quarter this year against $4,936,000 in 1940, according to Mr. Calder.

The Kraft market has not yet reflected war conditions either in volume or price, Mr. Calder stated, for the domestic consumption of kraft paper and bags during 1939 and 1940 ran at less than normal rate of growth and bag prices in 1940 averaged 8% below the 1937 price average.

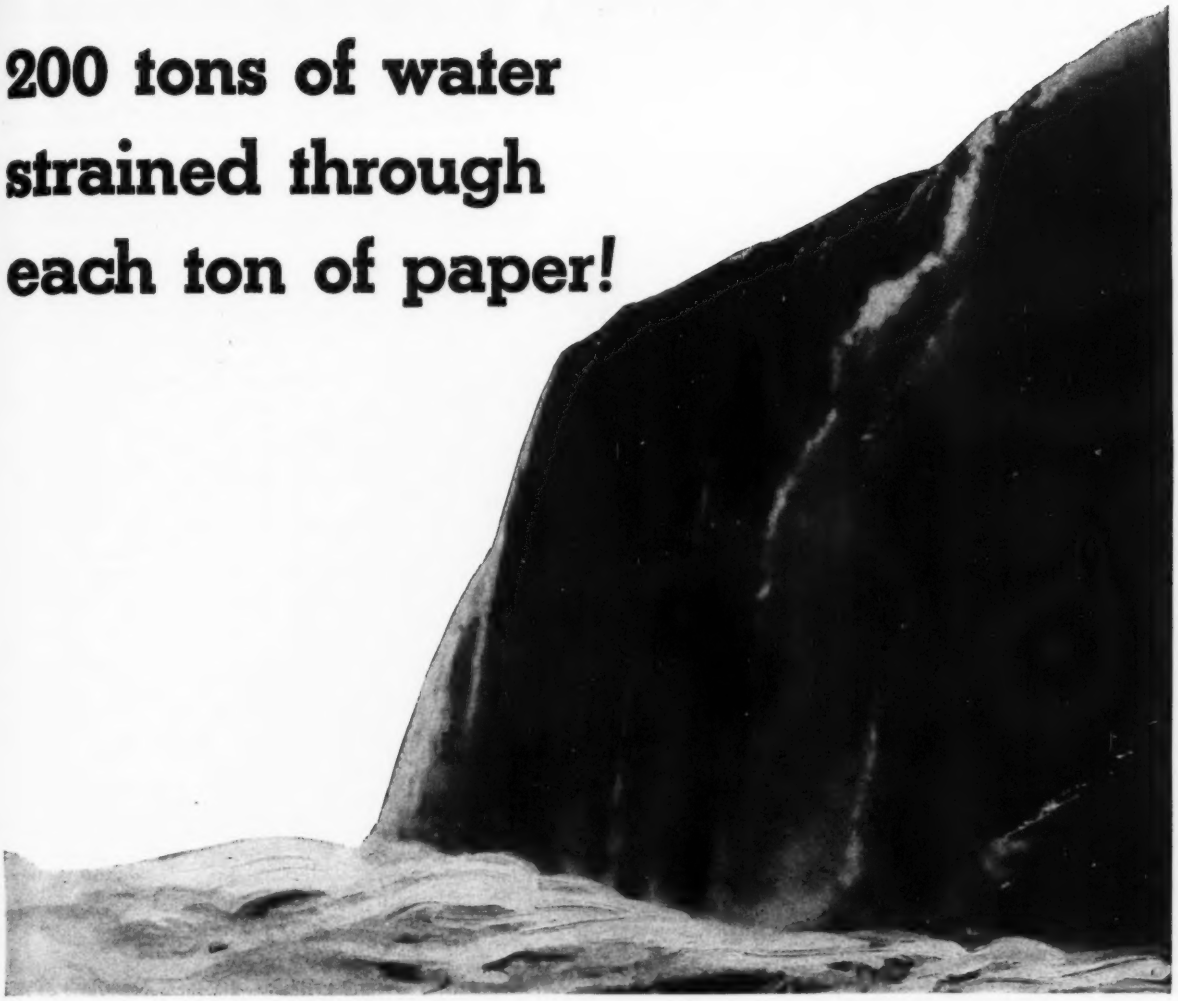
"War conditions are nevertheless exerting more and more pressure on the industry; the squeeze coming from both ends with curtailment of pulp imports on one hand and increased demand for kraft exports on the other," Mr. Calder said. It seems inevitable that the price of kraft products must soon reflect this underlying pulp situation, without giving consideration to other factors of increased cost such as wood, supplies, freight, labor and taxes, he stated.

Malcolm S. Black was elected a director of the corporation at the meeting, being the only new member of the board. The by-laws of the corporation were amended to include provision for indemnifying directors and officers in certain instances, and a retirement plan affecting salaried employees was adopted.

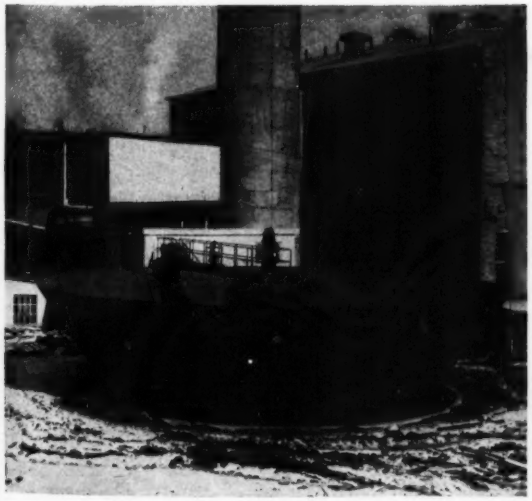
Continental Nets $771,767

The Continental-Diamond Fibre Company and Subsidiaries—For 1940: Net profit from operations, before provision for Federal income and excess-profits taxes and appropriation for reserve for contingencies, $771,767, an increase of $545,737 over the previous year. Net income after those deductions was $509,652, against $198,625 in 1939. Net sales

200 tons of water strained through each ton of paper!



Process water impurities harm product quality



To prevent raw water from leaving its impurities in your product, you can refine the water before you use it. Permutit* provides complete protection. Simple, automatic water conditioning equipment makes your process water exactly as you want it...soft, clear, iron-free.

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PERMUTIT

WATER CONDITIONING HEADQUARTERS

were $6,311,779, against $5,028,231 in 1939. These figures include sales to foreign subsidiaries amounting to $272,162 in 1940 and $162,821 in 1939.

At their annual meeting in Newark, Del., on April 23 stockholders of Continental-Diamond Fibre Company will consider approving the action of the board of directors in 1940 in applying the profit-and-loss deficit of $1,375,401 as of December 31, 1939, to capital surplus.

Nashua Earns $7.25

The Nashua Gummed and Coated Paper Company reports a consolidated net income of $368,030 for 1940, after provision for income and excess profits taxes, minority interest and exchange adjustments. For 1939, the corresponding figure after an inventory adjustment was $362,508.

After deducting premiums paid on preferred stock called for redemption, and preferred dividends, a balance of $334,370 was reported for 1940, amounting to $7.25 a share on 46,508 shares of common stock in the hands of the public. This compares with a balance for 1939, after inventory adjustment, of $326,172, also after premiums paid on preferred stock called for redemption and preferred dividends, equal to $7.08 a share on the common stock.

With the retirement of 1980 shares of first preferred stock called for redemption on January 1, the entire capitalization of the parent company is represented by common stock.

Price Bros. Nets $2.17

Price Brothers & Co., Ltd., and subsidiaries (Canada)—for 1940 reports a net profit, of $1,532,938 after $1,000,000 provision for income and excess profits taxes. After dividends on 5½% preferred stock, profit is equal to $2.17 a share on 547,857 common shares. For nine months to December 31, 1939, net profit was $387,453, or 23 cents a common share. Current assets on December 31 last were $15,505,900 and current liabilities $4,275,571 against $14,488,401 and $4,743,253, respectively, at end of 1939.

St. Helens Earns $2.07

A net profit for 1940 of $414,059 after all charges, including depreciation, amortization and provision for federal income taxes, was made by the St. Helens Pulp and Paper Company, its annual report disclosed. Earnings per share were $2.07 against $1.55 in 1939 and the profit represents an increase over the $310,504 in 1939 and $316,970 in 1938.

Chemical Paper Earnings Off

HOLYOKE, Mass., April 14, 1941—The Chemical Paper Manufacturing Company reports for 1940 a net profit of $98,376 after all charges, including federal taxes. This compares with a profit in 1939 of $117,831. Net sales were $2,588,577, compared with $2,304,799 in 1939.

The Strathmore Paper Company has voted disbursement on accumulation of $2.50 on the 6% preferred stock payable April 1 to stockholders of record March 31, leaving arrears of $10 a share.

Lake States Discusses Instrumentation

The Lake States Section of the Technical Association of the Pulp and Paper Industry held its regular monthly meeting at the Conway Hotel, Appleton, Wis., Tuesday, April 8, at 6:30 P.M. There were about 100 present with Chairman M. L. Downs presiding.

Several papers were presented, the titles of which were: "The evaluation of paper testing instruments" by G. R. Sears; "Recent developments in instrumental techniques of analysis" by D. R. Moltzau; and "The Institute pulp testing program" by C. M. Koon.

Among those present were: F. J. Allard, L. H. Andrews, J. W. Bard, Harold Baribeau, R. J. Benson, Donald Booton, P. B. Borlew, M. E. Carver, H. Y. Charbonnier, James d'A. Clark, R. B. Clarke, C. W. Converse, H. E. Cooper, R. C. Crain, H. C. Crandall, Fred Damp, H. P. Dixson, Robert C. Doxen, M. L. Downs, G. F. Enderlein, J. A. Extrom, J. R. Fanselow, H. V. Frederick, A. T. Gardner, Winifred B. Giese, J. H. Graff, J. W. Grimes, W. S. Grimes, K. D. Hay, A. M. Heald, Lynn D. Howell, I. H. Isenberg, C. E. Johnson, C. M. Johnson, W. A. Johnson, Peter E. Jones, Harold Kriekard, Stephen Kukolich, Otto Kuemmerling, A. Lewenstein, J. M. Line, George N. Lowle, N. L. Malcove, James M. McAlear, John McIntyre, D. R. Moltzau, C. R. Morse, L. A. Moss, D. Murchison, W. Neilson, W. F. Nelson, R. A. Nugent, Carl Nystrom, A. C. Olejneizah, L. Pagel, S. R. Parsons, L. B. Penhallow, W. J. Plank, T. R. Probst, E. W. Rasmussen, Herbert W. Rowe, John D. Rue, F. W. Sanders, C. A. Schroeder, Henry E. Schulz, H. J. Schweger, G. R. Sears, George H. Sheets, Joe Smart, Clyde Smith, C. W. Steele, Robert M. Stuart, R. Tourangeau, M. W. Van De Loarschot, J. A. Van den Aker, Joe Viall, E. H. Voigtman, H. L. Voss, A. G. Wakeman, Edward Walk, John Weidner, S. D. Wells, H. Wenberg, and R. J. Zaumeyer.

Quebec Pulp Reports Loss

The annual report of the Quebec Pulp and Paper Corporation and subsidiaries for 1940 shows a consolidated loss of $249,360 as compared with a loss of $244,957 for 1939, the increase being explained in the report of the president, A. Stewart McNichols, as largely brought about by higher fixed charges and to a smaller degree by expenditures incurred having surveys made and obtaining expert engineering advice to determine the adaptability of the company's plants.

The president's report makes the following references to conditions:

"While there was an appreciable increase in volume of pulp and paper produced and sold by Canadian mills in 1940, the industry, as a whole, operated substantially below its rated capacity. The uncertainties inherent to the marketing of groundwood pulp which was formerly produced at the company's mills, are such that consumers have shown unwillingness to enter into long term commitments."

To Represent Whitney-Anderson

BOSTON, Mass., April 14, 1941 — Frederick G. Lockwood, formerly treasurer of Knight, Allen & Clark, Inc., is now Boston representative of Whitney-Anderson Paper Company, of Springfield, Mass., with his office at 77 Summer street.

CONSTRUCTION NEWS

Buffalo, N. Y.—Contracts for the design and construction of a new warehouse adjoining the present Buffalo headquarters of the U. S. Corrugated-Fiber Box Company at 180 Hopkins street, have been awarded to the Austin Company, engineers and builders.

The addition, 80 x 300 feet, will be of fireproof construction. H. J. Lacy, Sr., president and treasurer of the company, stated that the expansion program was made necessary by increased business in the district served from Buffalo where the company's present branch plant was established in 1937. Headquarters of the company, which manufactures corrugated and fiber shipping containers, are in Indianapolis.

Other branch plants are located at Dayton, Ohio, at Knox (Clarion County), Penna., and at Warwood (Wheeling), W. Va. All have been fully equipped with the most up-to-date production equipment.

Milwaukee, Wis.—The Milwaukee Lace Paper Company, Inc., 1306 East Meinecke avenue, manufacturer of paper specialties, has awarded general contract to the Universal Construction Company, Inc., 605 South 12th street, for alterations and improvements in plant. Work will be placed under way at once. No estimate of cost announced. Charles F. Smith, 717 North Sixty-fifth street, Wauwatosa, Wis., is architect.

Cleveland, Ohio—The Hinde & Dauch Paper Company, Inc., Sandusky, Ohio, manufacturer of corrugated boxes and containers, has awarded general contract to Albert M. Higley Company, 2036 East 22nd street, Cleveland, for proposed addition to branch plant at 2110 West 110th street, Cleveland, recently noted in these columns, comprising a one-story structure, approximately 150 x 300 feet, to be used for storage, distribution and other operating service. Cost estimated over $85,000, including equipment. Work on super-structure will proceed at once. Completion is scheduled in July.

Jersey City, N. J.—The Asbestos Corporation of America, Inc., 90 West street, New York, N. Y., manufacturer of fiber products, asbestos goods, etc., has arranged for purchase of a three-story industrial building at 451-53 Communipaw avenue, Jersey City, heretofore held by the Amsco Wire Products Company, on site 135 x 138 feet, and will modernize and equip for new plant. It is expected to take over property at once and proceed with work.

Chicago, Ill.—Jacob M. Alexander & Company, 1410-18 South Wabash avenue, manufacturers of cellophane products, have leased portion of seventh floor in building at location noted, and will occupy for expansion in converting plant.

New Haven, Conn.—The National Folding Box Company, James and Alton streets, manufacturer of folding and other paper boxes and containers, has approved a number of sub-contracts for new two-story addition to plant, previously referred to in these columns, including structural steel framing to the American Bridge Company, Inc., New York, N. Y., and roofing to the Barrett Roofing & Supply Company, Bridgeport, Conn. Structure will be 50 x 250 feet, and will provide for increased capacity in main production departments; cost will approximate $150,000, with equipment, instead of smaller sum previously reported. A building permit has been issued and erection is scheduled to proceed at early date. The E. & F. Construction Company, 94 Wells street, Bridgeport, has the general erection contract. Fletcher-Thompson, Inc., 1337 Fairfield avenue, Bridgeport, is architect and engineer.

Camas, Wash.—The Crown-Willamette Paper Company, manufacturer of kraft and other wrapping paper stocks, book and tissue papers, etc., has secured a number of bids on general contract for new addition to local mill and will make award for erection at early date. It will be four-story, 110 x 120 feet, and used for expansion in paper-converting department. Cost estimated over $150,000, including equipment. Company also will make certain improvements in property to provide for the new unit, as well as extensions in sewage system at mill. Company is a subsidiary of the Crown-Zellerbach Corporation, Pittock Block, Portland, Ore., and 343 Sansome street, San Francisco, Cal. Company engineer at branch mill of parent corporation, at Port Angeles, Wash., will be in charge of work.

Chicago, Ill.—The National Biscuit Company, 449 West 14th street, New York, N. Y., plans a large paper box and carton department in proposed new baking plant on tract of about 50 acres of land at Chicago, recently acquired, bounded by Kedzie and Homan avenues, Seventy-third street and line of the Belt Line Railway. New plant will comprise several one and multi-story units and is reported to cost close to $5,000,000, with equipment.

Chicago, Ill.—The Container Corporation of America, Inc., 111 West Washington street, Chicago, manufacturer of corrugated boxes and containers, has awarded general contract to the E. L. Lonergan Company, 203 North Wabash avenue, Chicago, for proposed addition to local mill at 404 East North Water street, recently noted in these columns. It will be one-story, 175 x 215 feet, estimated to cost in excess of $125,000, including equipment. Alterations and improvements also will be made in present plant. Work is being placed in progress. James B. Black, 520 North Michigan avenue, is engineer.

New Brunswick, N. J.—The Armstrong Cork Company, Liberty and May streets, Lancaster, Pa., manufacturer of insulating board and kindred products, flooring felts, roofing felts, etc., has plans under way for new one-story addition to branch mill on Codwise avenue, New Brunswick, to be equipped for increased capacity. No estimate of cost has been announced. It is proposed to ask bids on general erection contract at early date. Company engineering department, Lancaster, is in charge.

Glens Falls, N. Y.—The Imperial Paper and Color Corporation, manufacturer of wall papers, etc., has begun work on superstructure for proposed new one-story addition to mill, 60 x 140 feet, recently referred to in these columns, and will have structure

ready for service during the summer. It will be used for increased capacity. Cost reported in excess of $60,000, including equipment. C. E. Waggaman, 200 Glen street, Glens Falls, has the general erection contract.

Rosario, Argentina—Celulosa Argentina S. A., Rosario, manufacturer of writing papers, book stocks, wrapping papers, etc., has plans for expansion in mill, covering large increase in newsprint department. It is understood that several new units will be built for pulp and finished paper-making divisions, with orders scheduled to be placed soon for required machinery in the United States. The pulp department will be arranged to utilize a combination of wheat straw and bamboo pulp, following a series of investigations and successful experiments for the use of such raw materials for wood pulp for newsprint. Further research is now in progress for the utilization of certain domestic timber and wheat straw for pulp manufacture. Expansion project is scheduled for completion around the close of this year.

New Incorporations, Etc.

Lawrence, Mass.—Blakelin-Cheney, Inc., 594 Essex street, has been organized with capital of 200 shares of stock, no par value, to deal in paper and pulp mill equipment and supplies. Francis A. Blakelin is president; and J. E. Blakelin, vice-president.

New York, N. Y.—The Robert Gair Company, Inc., 155 East Forty-fourth street, manufacturer of corrugated boxes and containers, etc., a Delaware corporation, has filed notice of increase in capital from $3,900,000 to $7,900,000.

New York, N. Y.—The Zenith Color Card, Inc., has been incorporated with capital of 100 shares of stock, no par value, to manufacture labels, sample paper and card specialties, etc. New company is represented by Milton Koerner, 545 Fifth avenue, attorney.

Start Work on New M. & O. Power Plant

Extensive plans for the installation of "standby" power-producing equipment to help operate the plants of the Minnesota and Ontario Paper Company on the Canadian border at International Falls and Fort Frances during seasons of low water, when hydro-electrical output fails to meet mill requirements, have just been announced by R. H. M. Robinson, president of the newly reorganized company.

Work on the "standby" power plant already has been started, and will be completed within a year. The project under way is conceded to be the biggest one undertaken by the M. & O. for the improvement of mill operations since its plants were erected, more than a quarter of a century ago. Installation of this auxiliary plant, it was announced, will greatly help to solve the company's power shortage problem, which has baffled mill officials during the past few months, and considerably restricted operations.

"Inadequate precipitation and stream flow from the Rainy Lake watershed has greatly hindered efficient and uninterrupted operation of the mills in recent months," C. T. McMurray, vice-president and sales manager, said. "This has seriously interfered with production schedules—frequently at times when there were heavy demands for finished goods. This has been especially true during the past winter."

The installation will not only increase the M. & O.'s available power but alleviate the effect of spring flood conditions, under which high "tail water" often interferes with power production.

The new unit will partly offset increased need for power resulting from the conversion of the International Falls mill to specialty paper production. This has created a bigger demand for products manufactured by the Fort Frances mill. Both mills will thus benefit from the expected increase in production.

Work on the removal of four obsolete boilers in the present boiler room already is under way. Plans call for the installation of a new 1,000 hp. high-pressure boiler in this room. Steam produced in the new boiler will be piped to the steam turbine room to propel a new 7,500 K. W. turbine of the condensing, double extraction type.

The new boiler will consume approximately 110 tons of pulverized coal each day it is in operation. Capacities of equipment selected were the largest among standard units immediately available. Larger units would have required special design and manufacture, and long delays in installation.

Northwest Superintendents to Meet

Arrangements for the spring meeting of the Northwest division of the American Pulp and Paper Mill Superintendents' Association are rapidly taking shape. The spring meeting will be held at Marinette, Wis., May 23 and 24. Headquarters will be at the Marinette Hotel during the two day session.

The committee in charge of arrangements for the meeting include: John V. Ziemann, chairman of the spring meeting; Harold W. Sherman, chairman, Northwest Division; Walter Johnson, first vice-chairman, Northwest Division, and N. L. Malcove, secretary and treasurer, Northwest Division.

The business program of the Marinette gathering will include mill visits, a round table discussion of paper making and mill problems, plus a series of interesting and timely technical papers to be given by well known authorities in their respective fields. The committee expects to make a formal announcement of the entire program in the very near future.

Due to the large turnout expected for the Northwest Division spring meeting, all those planning to attend are requested to send their reservations in as soon as possible to John V. Ziemann, Southern Kraft Corporation, Marinette, Wis.

Forest Products Div. Abolished

WASHINGTON, D. C., April 16, 1941 — Forest Products Division of the Bureau of Foreign and Domestic Commerce under which the Paper Section functioned has been abolished, together with all of the thirty divisions of the Bureau under reorganization, and five new major divisions have been set up. These divisions are: The Division of Research and Statistics, the Division of Industrial Economy, the Division of Regional Economy, the Division of International Economy and the Division of Commercial and Economic Information.

P. A. Hayward, who was Chief of the Forest Products Division, has become head of a so-called Durable Materials Division. Personnel of the former Forest Products Division has been divided up in different sections of the reorganized Bureau.

Launch Log Drives

[FROM OUR REGULAR CORRESPONDENT]

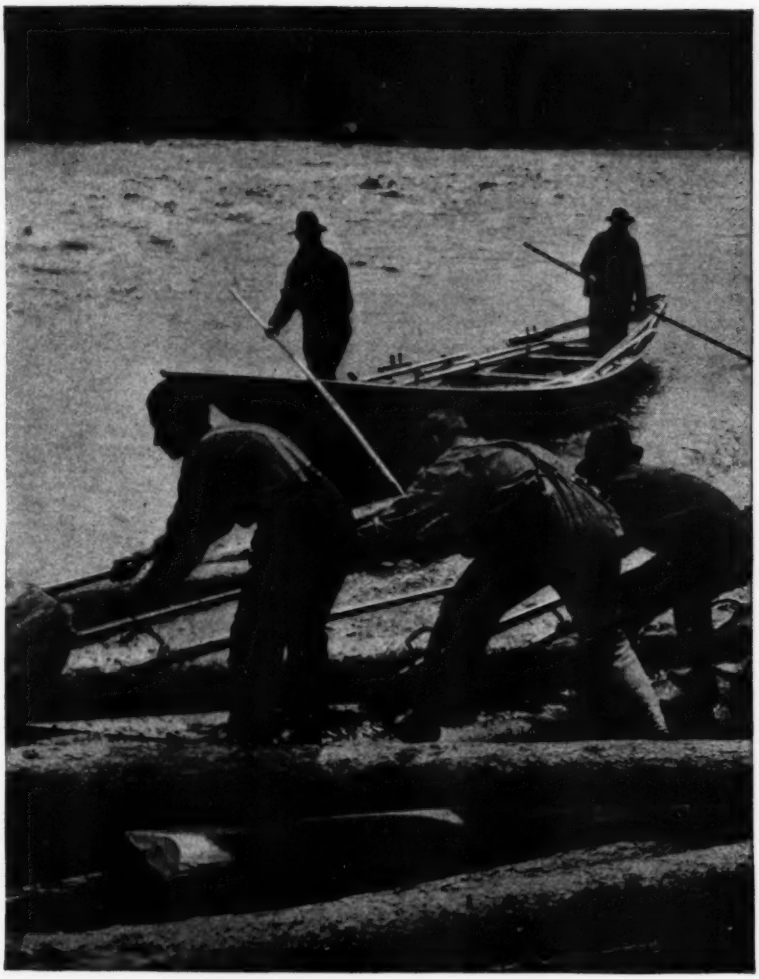
GLENS FALLS, N. Y., April 14, 1941 — That latter part of this month will witness the launching of log drives from various sections of the Adirondacks in order to replenish the fast dwindling pulpwood stocks of a number of the paper mills in Northern New York. About the middle of this month it is estimated that about 60,000 cords will be brought down the Hudson and Moose rivers by lumberjacks in the biggest log drives in the history of the state. The largest drive will be on the Hudson where about 40,000 cords of spruce and balsam will be floated from Newcomb to the mills of Finch, Pruyn & Company. About 10,000 cords more than last year will be shipped. The other big drive is down fifty miles of the swirling waters of the Moose River to Lyons Falls in Lewis County and it is estimated that about 20,000 cords of timber will be in the shipment. The annual overland drive in the Malone area will be conducted overland by truck this spring, it being estimated that about 100,000 feet of timber will be cut on the huge tract of Johnson Brothers in Belmont. Another overland drive will occur between Salisbury Center and Mechanicsville where a consignment of 25,000 cords must be transported from the logging center to the mills of the West Virginia Pulp and Paper Company for conversion into fine grade paper.

Behr-Manning To Build

[FROM OUR REGULAR CORRESPONDENT]

WATERVLIET, N. Y., April 14, 1941—Announcement is made by the Behr-Manning Corp. of the awarding of a contract for the construction of a new abrasive building, 140 by 400 feet, one story high, which will house all modernized equipment. It was stated that the structure will not be used for production expansion but is simply another step in revamping manufacturing methods. The Tuttle Company of Boston, has been awarded the contract and the building is to be ready in September.

An extension of 100 feet on one building was completed about a month ago and earlier another structure for manufacturing purposes was completed.



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Draper Felts Favor Efficiency

DRAPER BROTHERS COMPANY

Woolen Manufacturers Since 1856 CANTON, MASS.

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Obituary

Byron B. Taggart

ATLANTIC CITY, N. J., April 13, 1941 — Byron Brown Taggart of Watertown, N. Y., died today in Atlantic City Hospital at the age of 67. Mr. Taggart came here five days ago. He was taken to the hospital from the Hotel Claridge shortly after his arrival here from Florida.

At his bedside were his widow, Mrs. Josephine C. Taggart, and a daughter, Mrs. Henry H. Babcock of New York. Also surviving are two other daughters, Mrs. William R. Adams of Watertown and Mrs. Stapley Edwards of Sydney, Australia, and two sisters.

Byron B. Taggart was one of the last of large-scale paper manufacturers in the Watertown section of the State. Although his father had founded the paper manufacturing firm of Taggart Brothers, the son expanded it until it controlled plants in Oswego and Herring as well as Watertown.

Mr. Taggart, in addition to his connection with Taggart Brothers, was the president of the Taggart Corporation, which he organized after the death of his father.

He was also a director of the Northern New York Trust Company, of which he was one of the original directors. He was associated in this enterprise with Floyd L. Carlisle.

Mr. Taggart was a member of the board of directors of the House of Good Samaritans, one of the largest hospitals in Watertown. He was a Mason.

Mr. Taggart, who was born in Watertown, was a graduate of Hamilton College. He maintained residences in New York City and Augusta, Ga. He had spent the past Winter in St. Petersburg and Fort Lauderdale, Fla.

Otto W. Renner

Otto W. Renner, veteran paper man, died at the age of 54, in Philadelphia on March 17. Mr. Renner who had spent over thirty years in the paper industry, at one time represented the Geo. W. Wheelwright Paper Company and the Standard Paper Manufacturing Company in the middle Atlantic States. He also held sales positions in the fine and course paper divisions of Philadelphia and Pittsburgh Paper houses. At the time of his death, Mr. Renner represented the Kelley Paper Corporation.

Almon A. Bush

Almon A. Bush, vice-president and a director of E. D. Jones & Sons Company, Pittsfield, Mass., manufacturers of paper mill machinery, died April 2 at the age of 77. He was born at Otsego, Mich., and had been with the Jones company thirty-nine years. He leaves a widow, a son, Holand, of White Plains, N. Y., and a daughter, Mrs. Arthur L. Hall of Schenectady, N. Y.

To Distribute Brown's Linen Ledger

The Olmsted-Kirk Company of Dallas, Texas, has been appointed distributor in that territory of L. L. Brown's Linen Ledger, the well known 100% new white rag permanent record paper made by L. L. Brown Paper Company, Adams, Mass.

To Produce Kaolin

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., April 14, 1941—Paper manufacturers will be interested in the report that by July 1 Canada China Clay, Ltd., expects to be turning out kaolin or china clay such as is used by paper manufacturers.

It is understood that Noranda Mines put up a quarter of a million dollars to provide production facilities for two important non-metallic minerals on property at Lac Remi, Quebec, about midway between Montreal and Ottawa. The other substance is silica for the manufacture of glass.

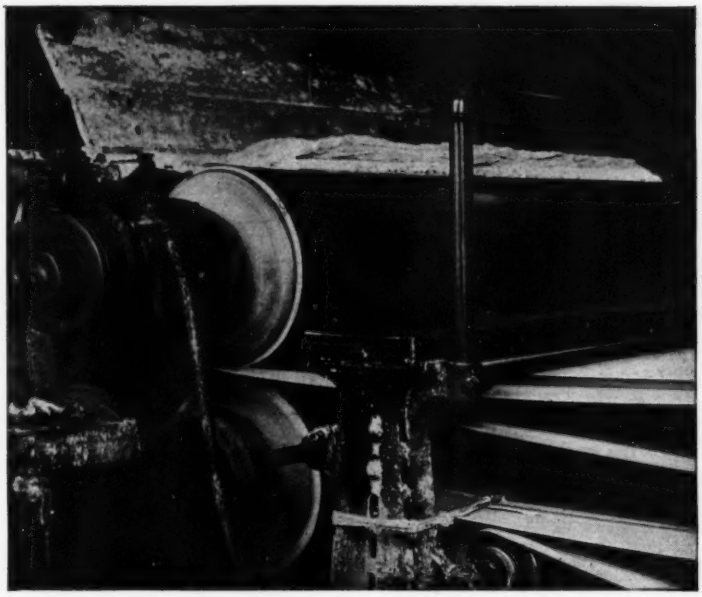
Chief supplies of kaolin are now imported from Cornwall, England, and amount to as much as 65,000 tons yearly. Some also comes from the State of Georgia. Most commonly used grades are stated to cost around $18 to $19 a ton laid down in Canada. When the new company gets into production, it is expected that kaolin can be delivered to paper manufacturers at $12.50 a ton.

The entire china clay output from the mines of the new company is expected to be used in paper manufacture although a supply will be available for the making of pottery and chinaware.

Work is now getting under way at the Canada China Clay property. The shaft is being dewatered and preparations are being made for installation of machinery.

Authorized capital of the company is 350,000 shares of which 289,900 shares are outstanding. A total of 25,000 shares was issued to Noranda Mines in consideration of the $250,000 loan, which is repayable with interest. Noranda Mines also holds an option on 50,000 additional shares of stock at $2.25 a share.

President of Canada China Clay is Robert A. Bryce, vice-president is J. R. Bradfield. Other directors are N. C. Urquhart, S. H. Robinson and C. R. Leonard. With the exception of Mr. Leonard, who represents New York interests, all directors are from Toronto.



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IN MANHATTAN Rubber Covered Rolls, you get the exact and uniform density required—for press, couch, extractor, draw or table rolls. This is one of the ingredients of skill and experience which assures a perfect nip; freedom from "washboarding" or pick; protection for your felts and longer service without regrinding.

With MANHATTAN Rolls, you speed production and maintain quality. This suggests the advantage of having your next roll covering job done by MANHATTAN.

Plants at: Passaic, N. J.—Neenah, Wis.—North Charleston, S. C.

THE MANHATTAN RUBBER MANUFACTURING DIVISION
of Raybestos-Manhattan, Inc.
Executive Offices and Factories, 58 Townsend Street, Passaic, N. J.

Knowlton Bros. Changes

WATERTOWN, N. Y., April 7, 1941—At a recent meeting of the board of directors of Knowlton Brothers, R. W. McCormick was elected vice president. E. W. Clarke was named production manager and H. A. Spencer, technical director.

Noble Mfg. Co. Insures Employees

Fifty-five employees of the Noble Manufacturing Company, paper manufacturers and converters at Cedartown, Ga., have recently become eligible to life insurance in amounts ranging from $500 to $1500 each, according to position. The workers of the Textile Paper Products Company, Inc., an affiliate organization, are also included in the group policy, which involves a total of $54,500.

The Prudential Insurance Company of America issued the policy on the contributory basis, the workers themselves paying a part of the premium and the remainder of the expense being assumed by the employing company.

PAPER TRADE JOURNAL
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Henry J. Berger
EDITOR

Vol. 112 April 17, 1941 No. 16

COMING EVENTS IN PAPER INDUSTRY

New England Section. Technical Association of the Pulp and Paper Industry—Third Friday of each month at the Roger Smith Hotel, Holyoke, Mass.

Delaware Valley Section. Technical Association of the Pulp and Paper Industry—First Friday of each month at the Engineers Club, Philadelphia, Pa.

Lake States Section. Technical Association of the Pulp and Paper Industry—Second Tuesday of each month at the Conway Hotel, Appleton, Wis.

Kalamazoo Valley Section. Technical Association of the Pulp and Paper Industry—First Thursday of each month at the Park, American Hotel, Kalamazoo, Mich.

American Pulp and Paper Mill Superintendents Association, Twenty-second Annual Convention, Poland Spring House, Poland Spring, Me., June 17-19.

Technical Association of the Pulp and Paper Industry, Fall Meeting, Ann Arbor, Mich., September 16-19.

REGULATING OF BUSINESS

As the national defense program broadens in scope and increasingly becomes more dominant in the national economy its influence on business becomes more apparent. Coordination of all governmental departments to insure maximum production of defense goods as well as adequate supplies of all commodities, is generally viewed as essential for success. This must necessarily include more strict governmental supervision of the important basic factors, such as priorities of materials, more effective means for the settlement of labor disputes and wage levels, and the establishment of increased control of invested capital and price-control measures to check the strong inflationary forces created by the huge expenditures of public funds.

Some of the governmental measures that would be essential if the United States was engaged in hostilities are now in operation. These agencies include the Administrator of Export Control, the Office of Production Management, the new National Defense Mediation Board and the newly created office of Federal Price Administrator to which Leon Henderson has been appointed. Although no concerted effort to control prices is apparently considered necessary by the Administration now, some business men advocate it, in the belief that by the intelligent application of priorities and proper allocation of supplies to civilian industries, control of any inflation could be checked at the start. In the food industry and also in government departments, competent opinion reflects the need for federal supervision eventually, to avert shortages and to keep prices from rising too rapidly and too high.

Secretary Wickard, of the Department of Agriculture, stated before Congress recently that British food purchases here would not exceed 3% to 4% of the United States' food bill. But leaders in the food industry point out that British buying will be concentrated in the lines of food, including fats, which are in increasing demand here, thus greatly reducing supplies and exerting strong pressure to raise prices. Coordinated buying is suggested as a step that may be taken soon to prevent any run-up of prices through large-scale competitive purchasing by commercial interests. An instance reflecting this possible occurrence is contained in the statement that some brokers are reported to be taking options on foods on the list of army supplies and it was feared that this might be increased to such substantial volume that prices would be forced up even if adequate supplies were available.

The trend of increasing government control is reflected in the comprehensive study of American business recently completed by the Temporary National Economic Committee. This three-year investigation of our business system and its recommendations must, of course, be considered particularly pertinent to the normal peace-time situation and policy of the United States. It is, therefore, not likely to meet the present needs of American rearming on a gigantic scale. One of the basic findings of the committee states there is a definite tendency toward monopolies and the conclusion is presented that this tendency should be reversed if democratic government and private enterprise are to survive and prosper. Among the principal recommendations are stronger anti-trust laws, government consent for future mergers of corporations, national charters for concerns engaged in national activities and repeal of the Miller-Tydings Act permitting manufacturers to make price-fixing agreements with retailers and a law to prohibit basing-point systems for prices. The general observation is made that "most of the wealth and income of the country is owned by a few corporations, that these corporations in turn are owned by an infinitesimally small number of people, and that the profits and operations of these corporations go to a very small group, with the result that opportunities for new enterprise . . . are constantly being restricted."

In taking office as head of the Office of Price Administration and Civilian Supply, created by President Roosevelt on April 12, Leon Henderson expressed the opinion that "all our prices ought not to go any higher. . . . We will watch wages as a prime cost factor. If unwarranted wage rises are in prospect, we will have a decided interest in them." Mr. Henderson explained that the smoothness with which productive efforts can be increased has a direct relation to price controls. He declared that governmental efforts both in the price control field and the development of productive capacity, especially availability of supplies, had restricted to four

points the advance in the Bureau of Labor Statistics wholesale price index during a period when the index of industrial production was advancing from 110, at the beginning of the total defense effort, to about 145 at the present time.

Prices of paper should be stable for some time, Mr. Henderson said after the conclusion of a conference with representatives of some of the leading paper and pulp manufacturers. "The estimated surplus of paper capacity in the United States and Canada over the estimated consumption for 1941, will amount to approximately 5,193,000 tons. This surplus exists in all but a few relatively unimportant grades of paper. Accordingly, the pulp and paper industry would appear to be one industry concerning which the Office of Price Administration can reasonably hope that it will not need to take any drastic action."

Mr. Henderson further said that, "It is gratifying to receive the assurances of the representatives of the pulp and paper industry attending this conference that the industry will cooperate with this office in its effort to maintain price stability. Such cooperation should make it unnecessary for the Price Administration to take more direct measures to guard against price spiraling in the pulp and paper industry."

Buy Paper Under Walsh-Healey Act

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., April 16, 1941—During the week ended March 29, the Government purchased $245,242.69 worth of paper under the Walsh-Healey Act as follows: $57,000.00 worth of paper towels for Treasury Procurement, D. C., from Reed Tissues Corp., Little Falls, N. Y.; $22,305.15 worth of newsprint paper for Post Office, D. C., from Boston Paper Board Co., Boston, Mass.; $15,340.80 worth label paper for Post Office, D. C., from Marquette Paper Company, Chicago, Ill.; $11,500.00 worth of bond paper for Navy, S&A, from The Baxter Paper Company, Inc., Baltimore, Md.; $10,770.00 worth protecting felt paper for War, Ordnance, N. J., from Ringel Bros., Newark, N. J.; $24,756.74 worth of mimeograph paper for War, QMC, Chicago, from Murnane Paper Company, Chicago, Ill.; $18,250.00 worth toilet paper for War, QMC, Brooklyn, from Ashland Paper Mills, Inc., Brooklyn, N. Y.; and $85,320.00 worth of paper napkins for War, Med., Brooklyn, from L. Hyman & Sons, N. Y. C.

Paper Index Number Higher

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., April 16, 1941—Index of value of paper manufacturers' inventories in February was 111.8 compared with the same figure in January and 107.1 in February of last year, taking December 31, 1938 at 100 according to the Industry Survey of the Department of Commerce, Washington, D. C.

February index of value of paper manufacturers' shipments was 148 compared with 142 in January and 119 in February, taking January 1939 at 100.

Production Ratio Report*

(Production as per cent of six-day capacity)

COMPARATIVE WEEKLY SUMMARIES

Current Weeks, 1941		Corresponding Weeks, 1940	
March 1	90.1	March 2	82.0
March 8	90.1	March 9	81.8
March 15	89.9	March 16	82.4
March 22	91.8	March 23	82.8
March 29	94.0	March 30	82.3
April 5 (Prelim.)	*92.9*	April 6	79.4

COMPARATIVE MONTHLY SUMMARIES

Year	Jan.	Feb.	Mar.	Apr.	May	June	July
1940	89.1	84.7	82.3	84.3	90.0	92.1	85.3
1941	85.1	89.4	*92.0*	...	...	...	...

Year	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1940	85.1	81.5	85.5	84.9	80.9	85.6
1941	...	...	...	...	...	...

COMPARATIVE YEARLY SUMMARIES

	1935	1936	1937	1938	1939	1940	1941
Year to Date	67.9	76.5	89.4	67.3	79.9	85.2	*88.9*
Year Average	70.0	80.4	79.8	71.5	83.4	85.6	...

* Based on tonnage reported to American Paper and Pulp Association. Does not include mills reporting to National Paperboard Association, except in isolated cases where both paper and paperboard are produced and separate tonnage figures are not readily available. Does not include mills producing newsprint exclusively.

PAPERBOARD OPERATING RATIOS †

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1936	62	67	67	70	69	70	69	75	78	82	80	74	72
1937	80	86	86	88	85	77	66	74	69	65	55	45	73
1938	54	60	61	57	58	56	57	66	66	70	65	59	61
1939	60	67	71	69	64	67	63	72	74	84	81	71	70
1940	71	70	69	70	76	79	72	74	72	79	77	71	73
1941	75	81	*82*	..	..	..	..	..	..	..	..	..	..

Week ending Mar. 1, 1941—82
Week ending Mar. 8, 1941—80
Week ending Mar. 15, 1941—82
Week ending Mar. 22, 1941—82
Week ending Mar. 29, 1941—84
Week ending Apr. 5, 1941—*83*

† Per cents of operation based on "Inch-Hours" reported to the National Paperboard Asan.

Bowling League to Banquet

The Paper Industry Bowling League will hold its annual banquet on Monday evening, May 5, at the Park Central Hotel. The banquet committee is headed by Frank Roberts of Henry Lindenmeyr & Sons, Inc., and the other members include Edward G. Penn of Riegel Paper Corporation, who is president of the league; Louis Greenman of Geo. W. Miller & Co., and Albert Isakson of Coy, Disbrow & Co.

The league will have exclusive use of either the Cocoanut Grove or the Florentine Room and the entire floor show of the Park Central Cocoanut Grove, featuring Jack Waldron, fifty gorgeous girls and Buddy Clarke and his orchestra have been secured for the event.

The season's trophies and awards will be presented. To the team finishing in first place will go the Riegel Trophy; to second place, the Godwin Trophy and to the third place, the Louis Bosch Trophy. Other trophies and cash prizes will be awarded to teams and individual players.

The Paper Industry Bowling League is comprised of sixteen teams from local paper merchants and mills with about 140 players and this is the fifth season of the League. The Paper Industry Bowling League started with only sixteen five years ago and at present consists of sixteen teams, which include Bulkley, Dunton & Co., Coy, Disbrow & Co., The Alling & Cory Company, Canfield Paper Company, Walker-Goulard-Plehn, Geo. W. Millar & Co., Henry Lindenmeyr & Sons, Marquardt & Co., Salesmen's Association, Southern Kraft Corporation, W. Virginia Pulp and Paper Company, Union Bag and Paper Corporation, Whitaker Paper Company, Riegel Paper Company, C. F. Hubbs Company, and J. E. Linde Paper Company.

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WAX IN ROSIN SIZES SOLVES IMPORTANT PROBLEM. To economically attain improved pliability without sacrificing other essential characteristics such as water resistance and strength is partially a matter of determining upon a suitable sizing formula. Since rosin size alone will tend to stiffen paper, the addition of a satisfactory modifying ingredient to the sizing formula is often made. A wax size in proper proportion, Cyanamid paper technicians have found, will solve the problem nicely. Cyanamid will be glad to assist you to determine the proper grade and percentage of wax size required in relation to the particular paper and methods of mill operation.

SIZING KRAFT PULP FOR PLIABILITY

The use of wax size usually not exceeding .2% based on the dry weight of the fiber, thereby increasing the pliabi of kraft pulp paper, has been a tor in the increasing use of kraft p throughout the industry. Details recommendations may be obtained addressing Cyanamid.

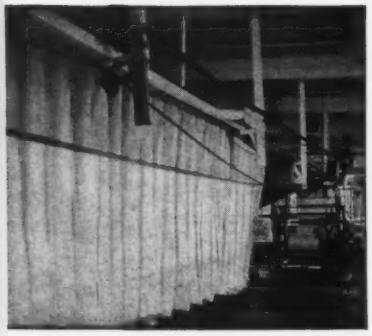
FLEXIBILITY VS. RELATIVE HUMIDIT

Wax sizes offset the tendencies of pa to crack and break due to loss in m ture content. This is a particul important advantage in cold weat when indoor humidities are likely be low.

Developing the means and method improve the manufacture and broa the usefulness of paper and pa products is the service that Cyanam paper technicians, field men of br practical experience, extend to paper industry. Backed by Cyanam laboratory research and developm these men are available for consu tion on any problem involving us paper chemicals.

If you have a technical problem c cerning flexibility – or any other s ject related to the use of chemica feel free to call on us for further in mation. It involves no obligation.

Wax size used in conjunction with rosin size keeps raw stock flexible so that it will handle well on the festoons of the coating machine and in the printing to follow.



Hanging papers will exhibit high water resistance and flexibility to conform to corners and other contours when one of the newer wax sizes is used with the rosin size during manufacture.

Use of wax in sizes makes writing surfaces more resistant to pen and ink. Wax sizes are particularly applicable to envelope papers that should fold without flat surfaces or cracks.

Box boards and die pressed products ha and shape to the die more readily by the of wax as a plasticiser in the sizing operati A flexible size also protects the water resis of the paper board at folded edges and corn

In addition to many new specialties for the paper field Cyanamid supplies:

WAX SIZES • COATING MATERIALS
ROSIN SIZES • SYNTHETIC RESINS
CASEIN • ALUM • TAPIOCA FLOUR
SULPHONATED OILS • FILLERS
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Section of the
Technical Association of the Pulp and Paper Industry

Edited by Ronald G. Macdonald, Secretary

Importance of Roll Pressure in Beating Pulp Stock*

By C. D. DeMers[1] and H. D. Johnston[2]

Abstract

The development of means for adjustments of the beater roll to a definite pressure has made it possible for the operator to more closely duplicate previous satisfactory results. As a further aid to the operators in using this principle of roll pressure, a complete automatic control unit was developed. This system of control makes it possible to automatically maintain the roll pressure at a constant value, or according to any predetermined schedule of pressure and time.

Normal variations in stock consistency are taken care of by the control mechanism. Control cams can be cut for each standard furnish.

We would like to approach the general subject of beating from a different angle, and to discuss the beater from a strictly mechanical standpoint, together with the operating variables related to its use. There are two strictly mechanical variables present in the operation of a standard or modified hollander beater. They are stock circulation and roll adjustment toward and away from the bedplate or plates. For a given consistency and furnish, the speed of circulation is fairly constant after roll speed, draft of roll and bedplate fillings, width of bedplate, slope of bottom, and fillets have been established. This leaves but one mechanical adjustment or variable—roll adjustment. These adjustments are the most important duty of the beaterman insofar as mechanical operation of the beater is concerned.

Pressure Recorder and Operation

The principle of the instrument used in recording the effects of roll adjustments, as related to roll pressure and the results obtained on the stock will be discussed.

The force-measuring element of this instrument is based on a new principle. The use of special steel, heat-treated to a definite schedule of temperature and time was necessary in building the tube system, the essential part of the instrument.

In making the installation, the load element, shown in Fig. 1, was installed in such a way as to support the adjusting end of the front lighter bar. As the roll is adjusted down so that it is supported by the stock passing over the bedplate, the element reacts to the decreased load and the pressure on the stock is recorded by a conventional recording mechanism. This element is sensitive and reacts to load changes that may be considered negligible when the weight of the roll and shafts are considered.

The instrument was installed in a mill, where a special rag furnish is used in the production of an high-grade specialty. For a period of time covering many years, the beater operators at this plant have followed a definite schedule of roll adjustment based on roll position and made at definite periods of time throughout the beating cycle. The stock was processed to a definite value based on freeness, and other special characteristics. The time required to bring this about has averaged over 30 hours. It has been so for a number of years, and the work carried on by several succeeding generations of beater room operators.

When the beater roll pressure recorder was first installed, it was used only to record the roll pressures resulting from the customary method of roll adjustments. The recorded pressure would remain approximately constant for a period of say 15 minutes after each adjustment, and then fall off slightly until the next adjustment was made.

As a result of studying a number of records made under these conditions, and noting the regular and definite tendency of the pressure to fall off, it was decided to formulate a tentative schedule of pressure and time, and to make the roll adjustments at the points in the records where the roll pressure started to fall off.

This schedule resulted in more adjustments during both the early part of the cycle and the latter part. The result of this new method of more frequent adjustment was startling as the stock was processed to

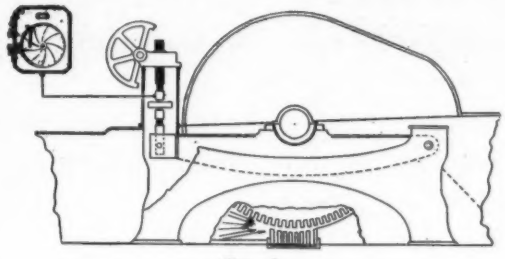

FIG. 1

* Presented at the Annual Meeting of the Technical Association of the Pulp and Paper Industry, Roosevelt Hotel, New York, N. Y., Feb. 17-20, 1941.

[1] Taylor Instrument Cos., Rochester, N. Y.

[2] Strathmore Paper Co., W. Springfield, Mass.

the predetermined value in about two thirds of the time formerly required. In order to check this unusual reduction of beating time, a number of further tests were made, and checked with extreme care. The results remained the same. The beating time was reduced from over 30 hours to under 20 hours.

Several other recorders were installed as a further check on the results obtained with the original installation. The results obtained justified their equipping a number of beaters, and modifying their beating schedule to a definite standard of beater roll pressures.

A reduction in beating time, with a resultant saving in power consumption is important from an economic standpoint, but the most interesting phase of that particular installation was the development of the fact that after each roll adjustment the roll pressure remained constant for only a short period of time; and then occurred what might be termed a "coasting" period, during which the rate of stock reduction and processing slowed down.

The fact that the rate of processing was materially increased by adjusting the rolls at shorter intervals of time and eliminating the apparent coasting period would indicate that roll pressure could be considered the most important variable in the operation of the beater.

Great strides have been made in general machine design during the past 25 years and in the development of means and devices as an aid to the operators in the control of the many processing and production units. However, the improvement made in the methods of adjusting a beater roll have not kept pace with the general improvement in machinery design, and the three methods shown in Fig. 2 below cannot be used in obtaining the highest degree of efficiency in the operation of the beater.

The first of these three methods of adjusting the roll to a definite position by counting the number of turns of the hand wheel is practical and gives the operator an idea of the clearance between the rolls and the bedplate. The second, a standard mechanical movement or position recorder does enable the operator to adjust the rolls to a definite position. Many of these instruments have been used during the past few years. The sounding rod or stick held against the bedplate box has been and is still extensively used. While the use of this method is not based on adjusting the rolls to a definite position, it is based on lowering the roll to a point where in the opinion of the operator the desired clearance is being maintained because of certain vibrations or sound effects felt through the sounding rod.

All three methods have enabled the operators to do a much better job than would have been possible

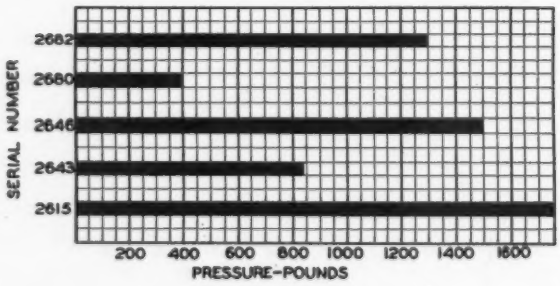

FIG. 3
The Same Roll Adjustment at the Beginning of Five Beating Cycles Produced These Wide Variations in Roll Pressures Due to Normal Variations in the Consistency of Each "Furnish"

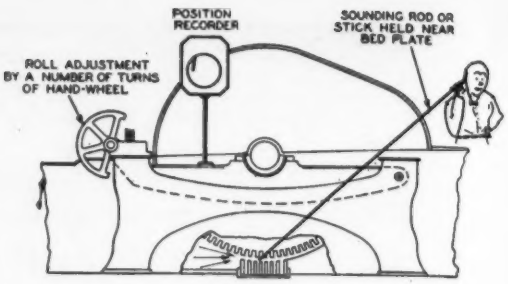

FIG. 2
Various Methods of Beater Roll Adjustment

without their use, but it is obvious that in order to use any method or instrument based on the principle of a definite clearance between the roll and the bedplate, it is necessary to control stock consistency 100%, if uniform brushing and beating is required of the stock being processed. It is not a simple problem to control consistencies to close tolerances. The airdry weight of the stock may vary; the character of the stock may vary as well as the amount of water furnished. The important operation of controlling a definite ratio of stock and water is left in most cases to the judgment and care of the beaterman. Notwithstanding an unusual amount of care on his part, the chances of variations in the amount of water are great, and the possibilities of variations in stock consistency as high as ¼ of 1% are equally so.

Roll Position vs. Roll Pressure

With the object of determining the relative importance of roll position and roll pressure, a number of installations were made on beaters where mechanical movement recorders were used.

In a plant using bleached sulphite pulp in the production of a high grade specialty, the operators were instructed to adjust the rolls in the usual way. The pressure recorders were used for recording roll pressures for a period of several weeks. During this test period no effort was made to change the routine operating practice, and the beaters were dumped to a definite value of freeness. The pressures recorded for several consecutive beating cycles were plotted, and the result was quite a shock to both the operators and the plant executives. The variation of over 800 pounds in two consecutive beating cycles is shown in Fig. 3.

As a further check on this problem, in order to determine the effect of roll pressure on the beating time, the length of several beating cycles was plotted, and

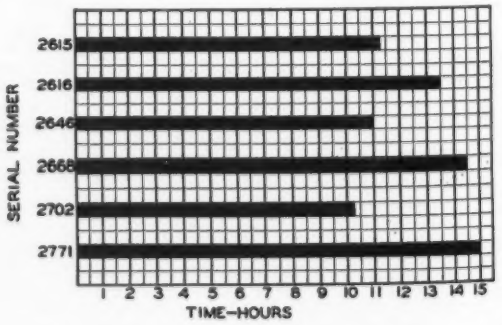

FIG. 4
Showing Variations of 4.8 Hours in the Beating Time of Six Typical Beating Cycles When Relying Solely upon the Position of the Roll. Each Beater Was Dumped to the Same Predetermined Freeness. Average Beating Time Was 12.5 Hours

again the variations were excessive, and showed a difference of approximately 4¾ hours between the shortest one of 10¼ hours and the longest one of 15 hours. A variation of nearly 30% in the beating time. This is an important item in the operation of any paper mill. (*See* Fig. 4.)

By checking the roll pressures as recorded during this test, it was possible to determine the average roll pressure at each half hour of a typical beating cycle and to work out a tentative schedule of roll adjustment based on pressure and time.

This schedule modified after a few trial runs, was used in adjusting the rolls and resulted in the reduction of 1½ hours from the average beating time required to process stock when the rolls were adjusted to a definite clearance. This is a reduction of over 11% with a material saving in power consumption. (*See* Fig. 5 for the length of four beating cycles with the roll adjusted to this modified schedule.)

In another plant where roll adjustments were made to a definite clearance, we were able to obtain figures on both beating time and power consumption with the roll adjusted first to a definite clearance and second, to roll pressure. This test covered a period of 70 beating cycles; 35 with the roll adjusted to a definite position, and 35 with the roll adjusted to a schedule of pressure and time. A record of power consumption was kept during the entire test period.

At the end of this test the results were analyzed and plotted with the results shown in Figs. 6 and 7.

The average beating time under roll position adjustment was 13.6 hours. The average beating time under roll pressure adjustment was 12.9 hours, a saving of 4.8% in beating time.

The average hourly power input during the period of roll position adjustment was 1109 kw.hr. The average hourly power input during the period of roll pressure adjustment was 1048 kw.hr., a saving of 5.5% in power.

These reductions in beating were evidently due to the fact that under roll pressure adjustments the roll adjusted to a definite pressure took care of normal variations in stock consistency and character, while with the roll adjusted to a definite clearance between the roll and the bedplate, the degree of processing varied with normal variations in the consistency and character of the stock.

This is important, not only from the standpoint of beating time and power consumption, but from the widely varying effects on the stock.

Stock passing under a roll with a pressure of say 400 pounds is not processed to the same extent as stock passing under the roll at 1600 pounds and more.

Automatic Control

As a further aid to the operators in using this principle of roll pressure the development of the idea was carried farther and a complete automatic control unit was developed. This system of control makes it possible to automatically maintain the roll pressure at a

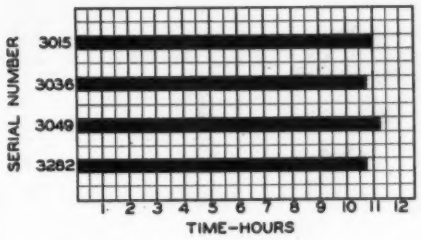

FIG. 5
Four Regular Beating Cycles with the Roll Pressures Adjusted the Taylor Way. Each Beater Was Dumped to the Same Predetermined Freeness as the Six in Fig. 4. The Average Beating Time was 10.9 Hours, with a Maximum Variation of only 30 Minutes.

constant value or according to any predetermined schedule of pressure and time. Normal variations in stock consistency are taken care of by the control mechanism. Control cams can be cut for each standard furnish, and it is no more difficult to change the cams on the control instrument than it is to change the charts on a standard recorder.

Full automatic control embodying the time-pressure schedule cams and automatic roll lifting at a predetermined period of time is being used in plants where the beating cycle varies greatly in length as well as in method of adjustment. In some plants from 35 to 60 minutes for a complete cycle; in other plants as high as 30 hours or more.

Automatic control is especially desirable in the elimination of the coasting period suggested earlier in the paper, and in the processing of stock at a definite and predetermined rate.

The control equipment is actuated entirely by the pressure on the stock as measured by the load measuring element of our instrument. Suitable accessory units reacting to any variation in the pressure as measured by our element put in operation means for adjusting the roll up or down as required to maintain the schedule prescribed on the cam. This arrangement makes possible a duplication of any previously satisfactory results within the closest tolerances.

Conclusions

Continuing our line of thought on the beater as a mechanical unit, with but two operating variables, circulation and roll adjustments, we would like to suggest that roll pressure resulting from roll adjustment is the most important function of a beater.

In considering the effect of roll pressure on the stock as measured in beating time, power consumption, and uniformity, and basing our opinions on the results of the several tests referred to and described in this paper, we believe the development of means to both record and control the process on the basis of roll pressure is an important step in improving the operation of an old processing unit. We believe further that the subject is of sufficient importance to justify further research on the relation between *beating pressures and degree of processing in a beater.*

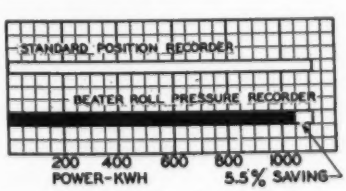

FIG. 6
Comparative Beating Time of 35 Beating Cycles

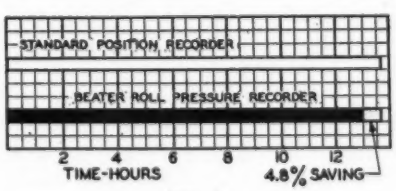

FIG. 7
Method Reduced Power Consumption 5.5 Per Cent in Test Referred to in Fig. 6

Nonfibrous Raw Materials in the Paper Industry, 1940*

Report of the TAPPI Nonfibrous Raw Materials Committee

By E. N. Poor[1]

According to the latest reports general business activity during 1940 was the highest on record. While the pulp and paper production did not keep pace, it did reach a new level. The average production ratio increased from 84.9% in 1939 to 87.6% with an estimated output of 14,300,000 tons.

The consumption of nonfibrous materials in the industry increased substantially due to three major factors: (1) increased paper production, (2) decreased pulp imports, (3) new uses.

Chlorine, sodium carbonate (soda ash), and sodium hydroxide (caustic soda) consumption increased due to the disruption of pulp imports. Chlorine use was enhanced as a result of sanitary measures in National Defense.

The use of salt cake substitute made from sulphur and soda ash expanded during the year.

Lime consumption increased with stable prices.

Rosin production was curtailed by the government loan and conservation program, but due to decreased exports, stocks were actually greater at the end of the year.

The use of titanium and zinc sulphide pigments, starches, silicate of soda, plasticizers, wax sizes, resins, and enzymes, exhibited continued expansion as new uses were developed.

In spite of the changes occurring in nonfiibrous materials, prices have remained firm throughout the year. Changes in availability and price are not anticipated in the near future. Perhaps the most uncertain prediction concerns alum which may be affected by (1) the increased use of sulphuric acid in the munitions and steel industries and (2) variations in price of imported bauxite from which aluminum is obtained.

Sodium Hydroxide (Caustic Soda)

There was an increase in the consumption of sodium hydroxide in the paper and pulp industry due to the fact that foreign shipments of pulp have been drastically curtailed. Apparently, however, there are large supplies of foreign pulp in this country since the consumption of this raw material is not unduly large. With the advent of new pulp mills in the south, a considerable amount of caustic is used in processing these pulps, but the increase is well within the capacity of the various manufacturing plants. In general, prices on this commodity have held fairly constant and we do not anticipate any sudden change.

We do not believe that many new uses for this material have been introduced in the pulp and paper fields. One small increase in the use of sodium hydroxide is one which is really not new, and that is the increased attention given to the deinking of used stock.

While it is difficult to predict the effect of war on the use of this commodity and upon its price and availability, we feel that since the paper industry is of vital importance that surely the Federal Government would insist that they receive adequate supplies of the material should this country become more active in the present war. As you probably know, the National Planning Boards have insisted that in the event of war, prices would remain fairly static and that the regular consumer would be taken care of. Any excess tonnage which might be needed for national defense would probably be derived by increasing production.

Sodium Sulphate (Salt Cake)

Production of natural and substitute salt cake increased substantially during the year. Approximately 15% of the total consumed was imported from countries other than Germany. Whereas one year ago imports from that country were substantial in spite of the blockade, those in 1940 were practically nil.

Demand for sodium sulphate was heavy throughout the entire year but prices remained firm. This condition is expected to prevail in 1941. (*See* section on Sodium Carbonate.)

Sodium Carbonate (Soda Ash)

Consumption of sodium carbonate in the pulp and paper industry during 1940 was substantially higher than the previous year. This increase is attributed to increased production of all grades of pulp consuming sodium carbonate in process; and to new uses of sodium carbonate in replacement of sodium sulphate.

Soda ash prices remained unchanged in 1940 and no change in price structure is contemplated for the first quarter of 1941. Quality standards have been maintained at the usual high Na_2O content, making it the cheapest source of alkali (Na_2O).

New uses of sodium carbonate which have been adopted in mill process are chiefly in the salt cake substitution field. Sintered mixtures of soda ash and sulphur are being used to replace salt cake in the kraft pulp industry. Similarly, a combination of soda ash and calcium sulphate (gypsum) is being successfully applied to replace whole or part of the salt cake. The development of these substitute chemical combinations has contributed largely in stabilizing the salt cake price structure. New interest has arisen in the manufacture of neutral sulphite semichemical pulps which promise to involve considerable sodium carbonate consumption.

Growth of the natural salt cake operations has produced some soda ash as a coproduct. Some soda ash tonnage has been displaced by use of liquid sodium hydroxide in mills that have changed the cooking process, or that are short on causticizing capacity

* Presented at the Annual Meeting of the Technical Association of the Pulp and Paper Industry, Roosevelt Hotel, New York, N. Y., Feb. 17-20, 1941.

[1] Member TAPPI; Chairman, TAPPI Nonfibrous Raw Materials Committee; and Technical Director, W. C. Hamilton & Sons, Miquon, Pa.

under the present demand for increased pulp production.

The effect of the European war during 1940 and the disruption of pulp imports thereby has increased soda ash consumption in the pulp and paper industry. The effect of the greatly increased demand for alkali anticipated from the preparedness program was not evident in 1940. The existing available capacity of the soda ash plants is believed to be ample to provide emergency demand in 1941.

Sulphur

There has been one change in the consumption of sulphur by the pulp and paper industry during the past year which is noteworthy. A number of the sulphate pulp mills have used salt cake substitute in place of imported salt cake. The sintered mixture of alkali and sulphur is reported to give entire satisfaction where it has been used.

Consumption of sulphur in sulphite pulp increased about 10% over last year. The price of sulphur f.o.b. cars mines has remained throughout the year at $16 per long ton. The customary high standard of quality has been maintained. No substitutes for sulphur have appeared during the year. The increased industrial pace in all lines of activity brought about by national defense effort has considerably increased the consumption of sulphur. The question as to probable effect of the war on sulphur, both as to price and availability during the coming year, is best answered by the recent statement of the Freeport Sulphur Company that "there will be no increase in the base price of an amount of sulphur sufficient to meet the demands of its customers for one year at the current rate of sales." As to availability, while war and our national defense effort will undoubtedly call for the production of increased amounts of sulphur, the industry is in a good position to meet all demands which will be made upon it.

Lime

The year 1940 was active for all chemical lime manufacturers with prices steady.

Heavy lime consumers such as steel, pulp and paper, and chemical plants were laboring vigorously to keep up with orders that called for capacity operations. No shipments of foreign pulp coming into American ports developed a sharp increased demand for domestic chemical pulp and its allied chemical products. The demand for chemical lime thus increased and will continue to be brisk with small surplus tonnages available, at least during the period of our National Defense program.

There is no question but that the National Defense program is going to constantly speed up its defense work, and in this connection every available piece of transportation equipment is going to be put in service for the movement of raw and finished materials. Lime is a perishable commodity and it is necessary to move it in good equipment, and since there is not going to be a surplus of this class of equipment, we suggest that every consumer of lime have cars loaded as heavily as possible.

Since the surplus chemical lime tonnage will be small, prices, we believe, will be firm. Any increase in taxes and wages will necessitate an increase in lime prices during 1941.

Chlorine

No change of importance occurred in the consumption of chlorine during the year. Price and quality remained stable with no new uses. The war has slightly increased the exports due to the expansion of United States Army and Navy personnel at camps and shore points, necessitating increased use of chlorine for sanitary purposes. Increased demands for high octane gas, magnesium metals, and the classification of low grade ores have consumed additional chlorine and all have been provided for without difficulty. During 1940 substantial additions were made to the chlorine capacity and in 1941 there will be still more.

Rosin

Rosin size has continued to be the principal sizing agent used in the paper industry, the quantities used being essentially constant, except for changes in the rate of activity of the paper industry itself. It has continued to be one of the cheaper ingredients of paper and, in fact, the price of rosin declined materially during 1940 compared with even the rather low prices which had prevailed in 1939.

While a continuation of government loan and conservation programs caused a decided curtailment in production of rosin in 1940 and gives promise of further reduction in supplies in 1941, the effect of war and blockades has been to cut off exports of rosin. The result has been that even though production was smaller, stocks have increased.

Reserve stocks are the largest in history and there is every indication that supplies will remain plentiful and that prices will be depressed for a long period to come. Except for possible transportation difficulties, rosin and rosin size should be classed among those commodities which the purchaser will be able to obtain with little difficulty in spite of the effect the preparedness program may be expected to have on commodities in general.

Alum

In spite of the fact that alum prices were considerably lower than the average of the past five or six years there have been no recent increases but the possible effect of the war may cause a change—the reason being that alum is two thirds sulphuric acid which in turn is a munitions and steel raw material. During the last war, the demands placed upon the available production of sulphuric acid were so high as to raise the market of the acid and hence alum to an extremely marked degree.

While there is greater sulphuric acid production available today than in 1917, the demand for bauxite ore to make aluminum is even greater than at that time, and the present situation on this ore is extremely uncertain and may become a factor as important as the sulphuric acid price. Measures are being taken to assure prompt shipment of orders, realizing that during the last war, municipalities and paper mills were often not sure when to expect their alum orders, if at all.

Considerable interest was exhibited in the Palmer filter bed agitator for water filtration plants, claimed advantages being a 40% reduction in wash water, longer filter runs, and increased filtering efficiency. Consumption of activated alum increased with the price remaining substantially constant.

Sodium Silicate

The use of sodium silicate in the paper and paperboard industries continued in 1940 without important

changes. The volume of silicates of soda required by the industry was naturally affected by general business conditions and silicate consumption improved as paper and paperboard consumption increased.

All the usual applications and uses of silicate of soda in the paper industry continue without change; no important new uses have appeared. Research looking toward new ways to use silicates in the paper industry continues to receive attention.

The war has undoubtedly affected many of the raw materials used in the paper industry. This is not true of silicate of soda, however. This commodity is made entirely of raw mineral materials which are abundantly available from domestic sources. There should be no difficulty in producing sufficient quantities of silicate of soda to satisfy all demands.

No pronounced changes are noted in the prices of silicate of soda.

Dyes

It is believed that dyestuff consumption during 1940 bears approximately the same relationship to paper production as in 1939 except that it may be slightly higher due to the extension of the use of color. Prices of dyestuffs on the whole have remained firm during 1940. The quality has remained about the same except for normal progress in improvement, particularly with respect to the solubility of certain products.

There has been no new development in the use of dyestuffs by the paper industry during 1940. However, two trends are evident. The first is the extension of the use of highly dispersed fast-to-light synthetic pigments for the production of papers required by usage to be light-resistant. The second is a moderate extension of the use of color to the all-over coating and staining of corrugated boards, cartons, and folding boxes by converting companies. It is estimated that at least 20 surface coloring machines were purchased for this purpose during the past year.

No substitutes for dyestuffs have appeared during the past year.

The war for the time being has not influenced the availability or the prices of dyestuffs used by the paper industry. Contracts for the first quarter of the year are being placed at the same prices which prevailed during the last quarter of 1940. It is too early to predict what influence the war will have on the availability of dyestuffs or prices later on but it is believed that there will be no shortage of dyestuffs for use in the paper industry for quite sometime, if at all.

Starch

There has been a slight increase in consumption of starches due to better business. Prices have increased on some materials; others are practically unchanged. Improvements have been made in existing materials and new ones have been developed with increased general use in the industry. There have been no substitutes.

So far the war has had little effect on the products but as time goes on imported products will probably be affected due to shortage of steamer space, and we look for higher prices on some commodities.

Titanium Pigments

The consumption of Titanium pigments continued to increase as it has each year since their adoption. As a result of continual research improvements in such properties as hiding power, tinting strength, color, and dispersion were realized. No changes in price occurred during the year, but early in 1941 a slight increase was made. The probable effect of the war is rather obscure, but it is predicted that use will increase normally as it has in the past.

Zinc Sulphide Pigments

The trend continues toward paper products of better color and brightness, as well as greater opacity, and with it the interest in the four types of zinc sulphide pigments. During the past year a number of paper specialties have been improved by addition of one of these pigments. This, coupled with the fact that prices have moved within a narrow range, may well open a still boarded list of applications among paper products for these highly opaque pigments.

In spite of the heavy demand on paper manufacturers for increased tonnages called for by the active industrial situation, there need be no fear of a shortage of zinc sulphide pigments. Ample manufacturing facilities are available to meet any increased pigment requirements. Neither will the European war affect their availability, as the raw materials needed to produce these pigments are in this country.

Clay

Consumption of china clay was at a relatively high rate, both imported and domestic. Prices remained firm throughout the year.

Plasticizers

There have been no outstanding technical developments in the use of plasticizers during the past year. Methods of application remain substantially the same, although consumption of softening agents has increased due to the better business conditions prevailing generally among firms making plasticized papers. The number of different papers being treated has again increased, indicating that plasticizing is on a firm footing and that the future will see further development of this relatively new phase of papermaking.

The bulk of plasticizing is being accomplished by the use of glycerine, invert sugar, and corn sugar or syrup. These are used separately or in combination, depending on the results desired. Efforts to use other agents have been generally unsuccessful, either for economic reasons or nonperformance of the material.

The various manufacturers of the three standard plasticizers have improved their products and increased their technical service. Highly refined corn syrups are on the market and have been found to be better than those formerly employed. Invert sugar, which has long been available in liquid form has been improved so that its hygroscopic powers are greater and its softening properties increased. A polyglycerol has been tentatively introduced with promising results. Not much is known of the possibilities of this material at present but it will undoubtedly be examined further in 1941.

A high degree of cooperation exists between the mills and the manufacturers of softeners. This close harmony has been largely responsible for the ever spreading use of plasticizers and the great number of softened papers that have been well received by the consumers.

So far the war has had little effect on either price or availability of the various agents. As shown in

the following table, current prices compare favorably with those for the past 4 years. It is expected that sugar-type plasticizers will continue to be readily available and no large price movements are anticipated. Glycerine may be affected to some extent in the future, although it is understood that processes for making synthetic glycerine can be quickly set up to supplement production of glycerine from fats should any serious shortage develop.

DECEMBER PRICES—5-YEAR PERIOD
Cents per pound—Carload

	1936	1937	1938	1939	1940
Glycerine	14–14½	25–26	12–12½	12–13	no change
Di-ethylene glycol	17½	18–19	16	14½–15½	no change
Invert sugar	4½–5½	4¾–5¾	4½–4¾	4¼–4¾	4½–4¾
Corn sugar	3¾–3¾	4	3½–3¾	no change	3½
Corn syrup	3⅛–3¼	3¾–3⅝	2¾–3	3	3½
Sulphonated castor oil	8–13½	9–14	6¼–11	.....	7–11
Sorbitol	20 (dry basis)	25 (dry basis)	15½–16	no change	14¾–15¼

Wax Sizes

The consumption of wax sizes in 1940 continued its upward trend which has been steadily maintained throughout the past 10 years, regardless of the depression in paper production.

In the field of surface sizing, the use of wax emulsions for improving scuff resistance of container paperboard has at least been maintained in proportion to the increased production and there has been a moderate increase in the use of such products in the production of drinking cup, butchers wrapping, and similar water repellent papers. The principal development in this field has come about in the improvement in the resistance of papers to the absorption of organic liquids, such as, printing inks and varnishes. Improved emulsions have facilitated such developments. At least one new product appeared in 1940 which gained immediate acceptance in the paper industry.

The greatest increase in consumption of wax sizes during the past year came in connection with engine sizing. Improved sizes, some containing rosin and some rosin-free, and better knowledge of their application are largely accountable for this development. Realization that wax size may be used in the beater to control to some extent absorption of oils and varnishes without necessarily affecting the density of the sheet has been a contributing factor. Increased use has been made of wax sizes in hanging paper to increase its pliability and water resistance.

Another development is the introduction of a precipitable, high-free rosin, rosin-wax size. This product has shown remarkable efficiencies in comparison with standard types of sizes in some cases and is especially effective in producing resistance to lactic acid. It is yet too new to determine the extent of its applicability.

Two types of waxes are in general use in the manufacture of wax emulsions—*viz.*, paraffin wax and amorphous petroleum wax. There was a rather wide fluctuation in the market for white crude scale wax which belongs to the paraffin class. It will be recalled that in the last quarter of 1939 there was a marked rise in the price of this product and at the close of the year the entire supply had practically disappeared from the market. Throughout January, 1940 it was quoted nominally at 7 cents per pound at New York. Some was sold in February and March at about 5.5 cents per pound. Successive declines brought the market to 2 cents in August which was the low for the year. In September and October a gradual stiffening of prices took place and the market was steady through November and December at a little under 3 cents per pound. There appears to be no reason to expect any greater effect of the war on the prices of wax than on commodities in general.

Movements in the prices of amorphous waxes have been in sympathy with scale wax markets, but fluctuations have been mild in comparison. The trend during the year has been generally downward.

Considerable improvements have been made in foam killers for improving sheet formation and increasing production. Emulsifiers for eliminating pitch troubles in pulp and paper mills are developing interest. The use of these materials is decidedly not of a luxury character and therefore will continue to be used for general production improvement.

Synthetic Resins

Synthetic resins, particularly the water-soluble or water dispersible types, either in or on the sheet, offer the paper manufacturer and converter a new tool by which special, unique characteristics can be imparted to the sheet. During 1940 this was realized commercially and several new papers containing synthetics appared on the market. Synthetic resins should not be construed as being a substitute for rosin; price rules this out, but the resins do find applications in various specialties where they impart to the sheet those properties demanded by the consumer in his ultimate use requirement. The price of synthetics ranges from 10 cents to several dollars per pound; obviously this limits their use to specialties, but as volume increases these prices will gradually fall within the reach of the average papermaker.

Among the types of resins being used now are: the water-soluble ureaformaldehydes for wet tensile and wet rub papers; the water dispersed, precured, prepolymerized alkyds, ureaformaldehydes, phenol formaldehydes, vinyls, acryloids, etc., for water resistance, wearability, scuff resistance, grease resistance, and for other special requirements, the water-soluble polyvinyl compounds and cellulose ethers for their film-forming properties and their grease resistance. Coating from solvents or by hot melts is another field of application of resins, but this is a rather restricted field; the solvent-free aqueous types which can be incorporated into the sheet or on it find more widespread application.

Since each application to date has been a special job to fit a specialty requirement, it is both inadvisable and difficult to generalize. Sales figures for 1940 are not accurately available; undoubtedly, sales were not of great tonnage, but they do show a considerable increase over other years, and do indicate that the trend is definitely upward. The war has had little effect on resin prices since the raw material sources are practically all domestic.

Enzymes

Use of enzymes for starch conversion during 1940 continued to increase. This process is now firmly established for tub and calender sizing for starch-coated papers and for various pasting and laminating purposes. More cornstarch, particularly the recently introduced "special" cornstarches, was converted than before because of the war's adverse effect on the prices of the imported starches; during 1941, if the war continues, more of the domestic starches will be converted because of lower prices. Enzyme prices

remained constant during 1940 but as usage expands should show a decrease; enzyme manufacture is, generally speaking, independent of the war's influence. Automatic time-temperature control for the conversion and subsequent inactivation of the enzyme was a distinct contribution which will become more widespread in the future.

Glue

Attention was called in the 1939 report that importations of glue from Europe were curtailed, that domestic production and consumption figures were closer together, and indications for 1940 were that continued market activity would bring a rise in prices which had been low.

The tightening up of basic raw stock, coupled with an increasing steady demand occasioned by the general step-up in manufacturing activity through the country, plus some speculative buying in anticipation of a higher market, brought moderately advanced prices in October, November, and the beginning of 1941. The outlook for the future is a matter of conjecture, but it may be well to keep in mind the new price level, which at this time is no higher than that prevailing in the spring of 1937, only 4 years ago.

Continued active research is always going on, new advantageous uses to the paper manufacturer are meeting favor under existing patent processes with the number of licensees continually growing.

Any effect the European war will have on glue prices will very likely be in keeping with the effect that war has on the prices of other general commodities with diversified versatile uses in general manufacturing as a whole, the old natural law of supply and demand governing. If industry refrains from speculative buying and purchases its requirements in an orderly manner not in excess of its current needs, consumers may be supplied without hardship. This in itself will act as a brake in keeping the market from getting out of hand.

Acknowledgment

Salt cake: A. E. Griffin, American Cyanamid Co.
Sulphur: D. B. Mason, Freeport Sulphur Co.
Soda ash: N. C. Weil, The Solvay Process Co.
Lime: W. F. Swan, Standard Lime & Stone Co.
Chlorine: S. W. Jacobs, Electro Bleaching Gas Co.
Caustic Soda: R. L. Carr, Mathieson Alkali Works, Inc.
Sodium Silicate: R. Morehouse, Philadelphia Quartz Co.
Rosin: J. C. Dieffenderfer, Hercules Powder Co.
Alum: H. J. Heffernan, Monsanto Chemical Co. and A. C. Brumley, Activated Alum Corp.
Starch: J. Goldstein, Stein, Hall & Co.
Dyestuffs: C. F. Schaumann, E. I. DuPont & Co.
Titanium pigments: W. R. Willets, Titanium Pigment Corp.
Zinc sulphide: R. Davison, New Jersey Zinc Co.
Wax sizes: R. W. Kumler, American Cyanamid Co., and J. H. Fritz, National Oil Products Co.
Glue: R. Tutt, Peter Cooper Corp.
Enzymes and Synthetic Resins: J. J. Thomas, Rohm & Haas Co., Inc.
Plasticizers: N. R. Pike, The Nulomoline Co.

Pacific TAPPI Meets at Port Angeles

The Pacific Section of the Technical Association of the Pulp and Paper Industry held its regular meeting at Port Angeles, Wash. on April 8. There were over 80 present.

The dinner, arranged by Harold Fretz, chief chemist, Rayonier, Incorporated, Port Angeles, was held at the Port Angeles Golf and Country Club. F. W. Olmstead, TAPPI chairman, presided. The joint spring meeting of the Pacific Coast units of the Technical Association and the Superintendent's Association will be held at the Portland Hotel, Portland, Oregon, June 6 and 7.

Ray Austin, technical supervisor, Washington Pulp and Paper Corporation, Port Angeles, discussed "Moisture Testing of Newsprint." He described a moisture tester developed by their laboratory and the results of testing; also, a review of moisture conditions of paper rolls in the warehouse over periods of a year.

"Characteristics of Diatomaceous Earth" was presented with photomicrograph slides by Howard W. Hall, of the Dicalite Company, Seattle. The origin of diatomaceous earth deposits, characteristics of diatoms and deposits, the mining, and uses were explained. The use as a paper filler was discussed.

W. R. Gibson, manager, Northwest Filter Company, Seattle, showed a sectional drawing of the accelerator water clarifier, and explained the functional design and operating characteristics.

Among those present were: O. C. Abbott, Fred Armbruster, Ray C. Austin, C. V. Basom, T. H. Beaune, Al Bibbins, James Brinkley, R. E. Bundy, Clarence L. Bunge, Joe Bush, Evert A. Carlson, O. S. Cauvel, E. J. Cavanaugh, Henry V. Charnell, R. E. Chase, Sidney M. Collier, N. W. Coster, J. V. B. Cox, P. T. Dickie, E. F. Drake, R. E. Drane, Raymond Dupuis, Conrad Dyar, J. C. Fey, Harold T. Fretz, Wm. R. Gibson, H. W. Hall, Dave Harris, N. A. Hartnagel, Wm. S. Hodgson, C. F. Holcomb, Robert Holcomb, James J. Hollender, Ivan R. Hoskins, Chas. A. Hulsart, Medler Johnson, B. L. Kerns, Glen D. King, Carl R. Koch, H. A. Larsen, R. A. Lawrence, Don Lawson, R. E. Le Riche, Norman A. Lewthwaite,

Earl F. McLane, Robert W. Martig, Jack Martin, G. T. Mickel, C. T. Mulledy, Max R. Oberdorfer, E. Eugene Olfson, F. A. Olmsted, Gus Ostenson, R. K. Prince, W. H. Rambo, Matt Rausch, E. P. Read, H. K. Roberts, Walter A. Salmonson, Harlan Scott, Brian Shera, Edgar C. Sherman, Fred Sievers, Glen Simkins, Henry Solbakken, H. S. Sprague, H. E. Springer, James B. Symonds, V. L. Tipka, R. M. True, F. K. Van Etten, J. V. Venables, H. A. Vernet, Russell O. Vognild, L. Warwick, Henry E. Weller, C. Kelly Wells, James W. Wenger, C. M. Williams and F. Leonard Ziel.

Pulp and Paper Industry in Quebec

MONTREAL, Que., April 14, 1941—The latest report of the Quebec Department of Lands and Forests emphasizes the importance of the pulp, paper and sawmill industries to the economic structure of this Province. It is shown that in the year under review the 44 pulp and paper mills in the province used 2,723,699 cords of pulpwood, out of which were manufactured 2,119,183 tons of pulp and 1,827,299 tons of newsprint. Employees in the mills totalled 15,442 with a yearly paylist of $21,318,707. Power employed by the mills amounted to 1,037,513 h.p., or the equivalent of one-fourth of the capacity of hydro-electric plants installed in the province. The cost was $11,000,000.

Performance of Streamflow Vat System on Ninepoint*

By J. R. Buchanan[1]

Abstract

Chestnut stock though free is extremely short and slow draining and difficult to form well. The bottle-neck of the operation in question was the formation both as to speed of operation and freeness of stock. A Goldsmith streamflow vat system was installed to eliminate the formation bottle-neck. This equipment is described. Its calibration in operation is explained. The machine now forms a superior sheet of much freer stock at maximum drive and drying speed.

From the viewpoint of formation, papermakers have long classified and spoken of stocks as roughly falling into four groups: (a) long and free, (b) long and slow, (c) short and free, and (d) short and slow. For fibers from any given plant source and pulping process, length and freeness usually go together as do shortness and slowness. Stocks which are short and free, or long and slow, are not as common and therefore behave in unexpected ways. The most extreme long and slow fiber which comes to mind is rope which offers formation problems peculiar to itself for that reason. The most extreme short and free fiber which the writer has encountered is chestnut which behaves differently than more "normal" stocks.

Chestnut ninepoint is made from leached chips after tannic extract has been removed. These chips are then cooked in rotary digesters by a semichemical process and defibered by attrition mills and by jordans. Chestnut stock has none of the forming characteristics which we designate with the broad label hydration such as fibrillation, fiber flexibility, or felting qualities. It is brash, harsh, and untreated, but on the other hand due to its extreme shortness it is resistant to drainage on the machine. It is therefore difficult to lower the consistency to a point where good dispersion of fibers before formation can be obtained. Due to these peculiarities this type of stock has a marked tendency to clot, mottle, and streak.

Formation Limitations

The mill in question was a typical example of an operation whose bottleneck was the formation of the

* Presented at the Annual Meeting of the Technical Association of the Pulp and Paper Industry, Roosevelt Hotel, New York, N. Y., Feb. 17-20, 1941.

[1] General Manager, The Harriman Company, Harriman, Tenn.

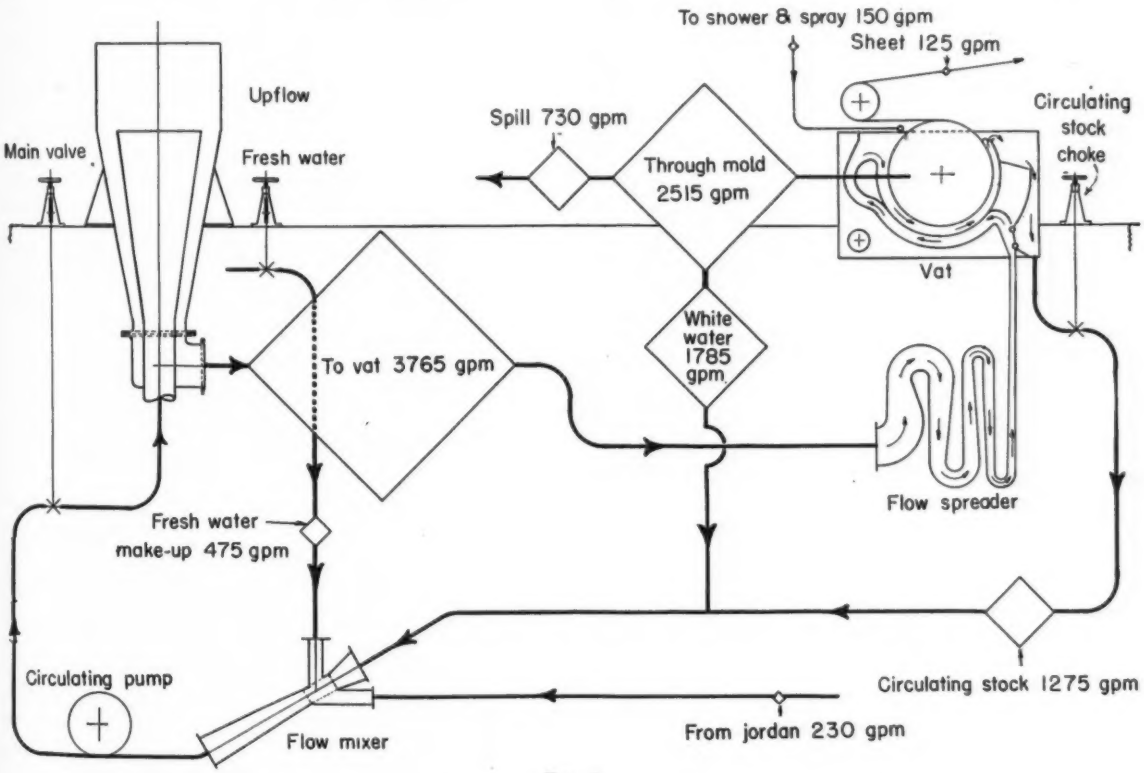

FIG. 1
Flow Diagram of Streamflow Vat System. (Test 25; 335 Feet Per Minute; October 15, 1940)

sheet. Speeds above 325 f.p.m. were impossible without a formation too blotched to be salable. At the same time, the stock had to be extremely slow at the vat inlet to form decently. This in turn required the use of large quantities of makeup water and the spilling of many fines out of the system. The resulting sheet was brittle. Weight variation across the machine were large (averaging about 14%) in spite of constant manipulation by the machine tender.

The stock had to be prepared for formation rather than for the sheet characteristics desired. It was recognized that if it were possible to form a wider range of stock freenesses acceptably, the quality of the sheet might be much improved, production increased, and costs lowered.

Streamflow Vat System

To remove the formation bottle-neck a study was made of the various types of equipment available. It was decided to install a Goldsmith streamflow vat system *(1)*. This new wet end was started up in September, 1940.

A typical flow diagram for the streamflow vat system is shown in Fig. 1. The returning white water and circulating stock are mixed with the new stock from the jordans and with the fresh makeup water in the flow-mixer *(2)*. The mixing is accomplished in the restricted throat without the presence of air.

The vat pump delivers the total gallonage to the up-flow *(2)*. The vat pump valve controlling the capacity of the pump has an indicating floor stand which permits easy operation and clear calibration.

The up-flow is introduced between the pump and the vat to steady the flow and to liberate air. The flow enters in an upward direction in an inner cone and flows downward in the space between the outer and inner cones.

The underfeed pipe which is 24 inches in diameter connects the up-flow with the flow spreader *(1)*. The latter spreads the flow so that it enters the vat inlet at the same velocity at every point across the machine. It is simply a properly designed hydraulic nozzle with a gradual angle of spread and a cross-sectional area which is progressively reduced. By doubling up the flow like an accordion it is made very compact.

The streamflow vat *(3)* has an outer circle the full width of the vat which acts as a last smoothing pass before the streamlined making board. The forming circle is adjustable at front, bottom, and back so that the velocity of stock flow with relation to the mold can be made ideal at every point throughout the whole forming length. The spill gates can be lowered to the bottom of the mold. The circulating dam controls the quantity of circulation in an equally simple manner.

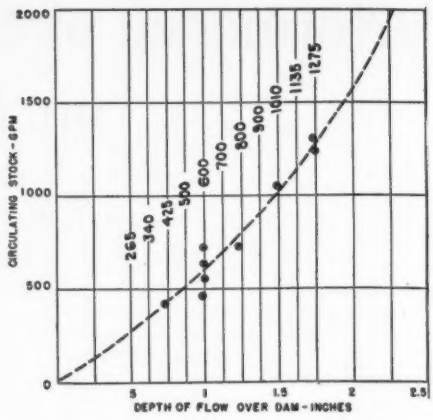

FIG. 2
Circulating Stock vs. Depth over 156-Inch Dam—G.P.M.

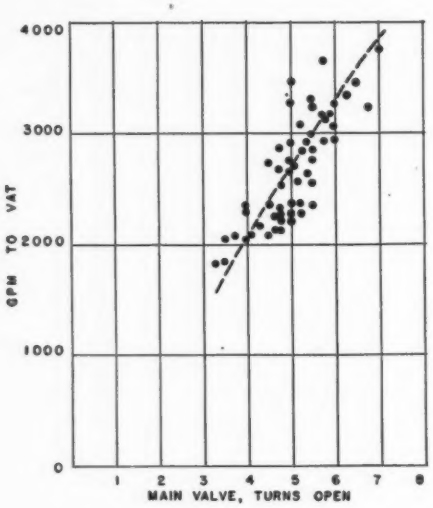

FIG. 3
G.P.M. to Vat vs. Main Valve

T	G.P.M.	T	G.P.M.
3	....	5	2675
3¼	1500	5¼	2840
3½	1670	5½	3000
3¾	1875	5¾	3175
4	2030	6	3325
4¼	2200	6¼	3470
4½	2370	6½	3600
4¾	2525	6¾	3700

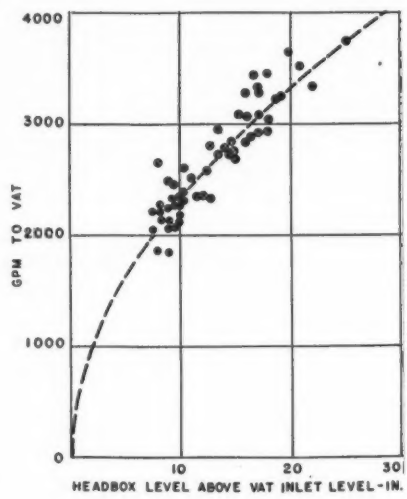

FIG. 4
G.P.M. to Vat vs. Headbox

H	G.P.M.	H	G.P.M.	H	G.P.M.
1	750	11	2480	21	3430
2	1060	12	2590	22	3510
3	1300	13	2700	23	3590
4	1500	14	2800	24	3670
5	1670	15	2900	25	3740
6	1835	16	2990	26	3820
7	1980	17	3080	27	3890
8	2120	18	3170	28	3960
9	2240	19	3260	29	4030
10	2370	20	3350	30	4100

TABLE I

Heading			
Test	*22*	*23*	*24*
Date	10/10/40	10/11/40	10/14/40
Time	1:00 P.M.	1:00 P.M.	1:00 P.M.
BW/M	30.0	26.0	26.5
Caliper	0098	0096	0101
Moisture, %	4.3	4.0	4.3
BW/M (moisture-free)	28.7	25.0	25.4
F.p.m.	325	355	360
Observed Settings			
Main valve turns open	6.5	5	6.25
Mold head	26	25	32
Circ. stock, depth	1.5	1.75	1
Circ. stock valve turns open	10.25	10	13
F.W. Make-up valve turns open	6.5	4.75	5.5
F.W. jordan disch. valve	3.5	3.25	4
Headbox level	21	18	22
Vat inlet level	2	3	2
Vat back level	....	....	....
Spill, depth	....	....	....
Temp., deg. F.	76	78	....
Vat circle clearance, front	7.5	7.5	7.75
Vat circle clearance, bottom	5.25	5.25	5.25
Vat circle clearance, back	4.5	4.5	4.5
Jordan 1, kilowatts	70	75	70
Jordan 2, kilowatts	70	75	70
Vacuum gage suc. ret. drum	18	....	13
Vacuum gage suc. pri. press	13	12	13
Vacuum gage main press	21	19	21
Steam pressure 12 driers, lb./sq. in.	28	27	28
Steam pressure 28 driers, lb./sq. in.	31	30	31
Steam pressure 10 driers, lb./sq. in.	21	34	31
Laboratory Tests			
Freeness to jordans, cc.	310	300	330
Freeness after jordans, cc.	200	180	205
Freeness at vat inlet, cc.	275	270	290
Freeness circulating stock, cc.	385	385	430
Consistency % moisture-free to jordans	5.62	6.22	5.80
Consistency % moisture-free after jordans	5.24	5.70	5.66
Consistency at vat inlet	0.73	0.77	0.70
Consistency % moisture-free circulating stock	1.15	1.33	1.37
Consistency % moisture-free white water	0.04	0.04	0.04
Tear ratio, machine/cross direction	0.75	0.68	0.66
Tensile ratio, machine/cross direction	2.37	2.31	2.42
Stretch ratio, machine/cross direction	1.00	0.87	0.85
Computed			
Formed, lb. per min.	110.3	104.8	108.0
Circ. stock, lb. per min.	96.9	142.3	68.6
White water, lb. per min.	8.8	9.4	8.9
Total to vat, lb. per min.	216.0	256.5	185.5
Through jordans, g.p.m.	....	....	....
Circ. stock, g.p.m.	1010	1275	600
To vat consistencies, g.p.m.	3555	4000	3180
To vat (main valve), g.p.m.	3600	2675	3470
To vat (headbox head), g.p.m.	3430	3180	3510
To vat ave., g.p.m.	3535	3465	3335
Drainage (ave.), g.p.m.	2525	2190	2735

A study of Fig. 1 shows that the usual formation limitations have been removed, not by any mysterious gadgets, but simply by sound engineering.

The flow is brought to the forming point in a smooth flow, thoroughly mixed, with free air removed, with exactly the same consistency and exactly the same velocity of flow at every point across the machine. The velocity of stock flow around the mold can be independently controlled at front, bottom, and back. The adjustable circle permits using large mold heads, without overspeeding the circle flow. The whole system is designed to handle large quantities of flow smoothly.

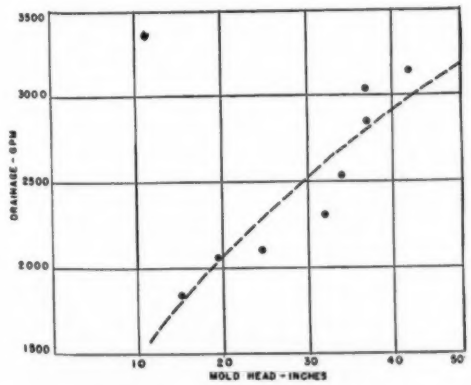

FIG. 5

Drainage vs. Mold Head (147-Inch Face Corrected to Basis Weight = 24.7 lb. Moisture-Free; Freeness = 200 cc.; Temperature 84 deg. F.)

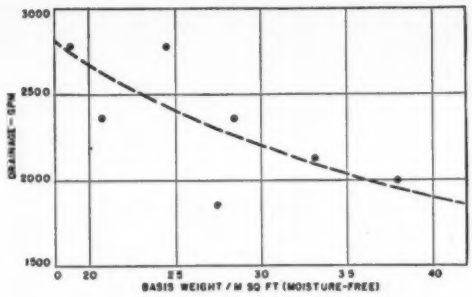

FIG. 6

Drainage vs. Sheet Weight (147-Inch Face—Corrected to: Mold Head = 20 Inches; Freeness = 200 cc.; Temperature 84 Deg. F.)

More mold head yields lower consistency and better dispersion. Together with control of stock flow around the mold it makes possible much higher speeds. These factors permit use of much freer stock. Due to the carefully designed approach flow the sheet is automatically level.

Even though a ninepoint machine is a single purpose machine, the adjustable vat circle was considered desirable if for no other reason than to find the ideal circle clearances in actual operation with ease and certainty. In addition increases in speed or changes in stock preparation would permit immediate determination of new circle clearances at front, bottom, and back. A sheet of paper is finally put together during its formation—it can be no better than its formation.

The quality and tonnage of the whole mill depend on how well and how fast the sheet can be formed. The machine tender is entitled to every assistance. Every adjustment should be calibrated and standardized. There are enough real variables in papermaking without creating unnecessary ones.

Table I gives some typical formation tests each one of which is in effect a flow diagram under a given set of conditions. The circulating stock is first calibrated in terms of depth of flow over the circulating dam *vs.* gallons per minute as shown in Fig. 2. Consistencies of circulating stock of white water and of incoming stock at the vat inlet allow computing the total flow to the vat and the drainage flow. The main valve setting and the up-flow head are plotted against total flow as shown in Figs. 3 and 4. After sufficient determinations have been made, the main valve scale and the up-flow water level are calibrated to read in gallons per minute. The operator can then read his total flow at two points independently. In Table I the total flow is arrived at by taking an average of the up-flow reading, the main valve reading, and the consistency computation. The last is given double the weight of the first two. The total flow minus the circulating stock flow is the drainage flow.

In order to determine the effect of any one variable it is necessary to be able to correct for all other variables to some standard basis. Test runs were made to show the effect on drainage of mold head, sheet weight, and freeness. During these test runs all conditions were kept constant except the one variable

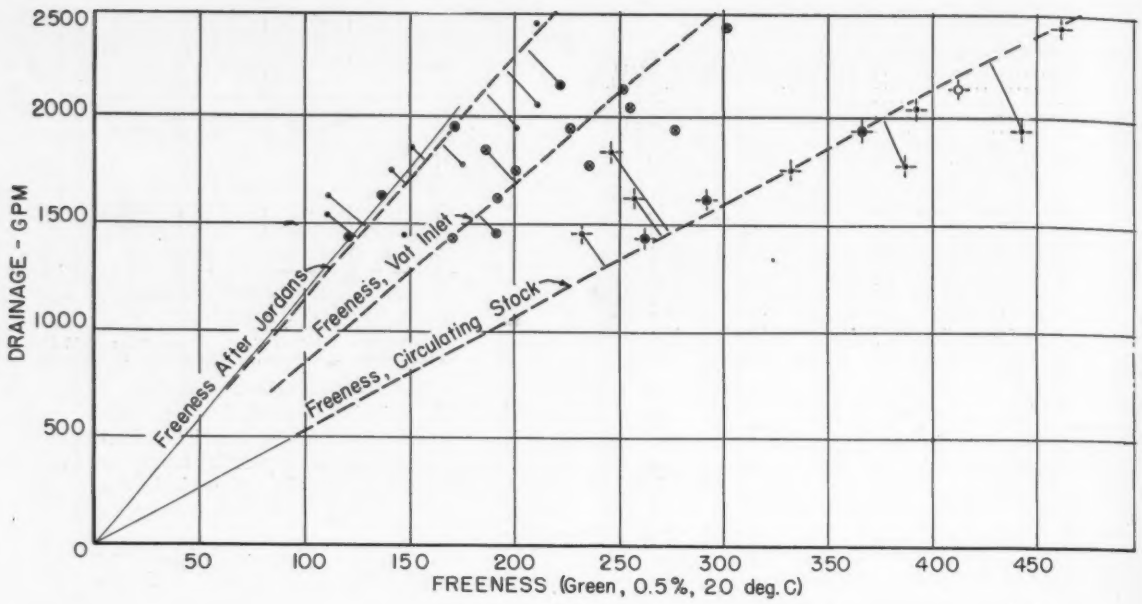

FIG. 7

Drainage vs. Freeness (147-Inch Face Corrected to Mold Head—20 Inches; Basis Weight—24.7 lb.; Temperature 84 Deg. F.)

After Jordan	Vat Inlet	Vat Circ. St.	G.P.M. Drain	Correction
80	138	172	920	2.500
100	135	215	1150	2.000
120	162	258	1380	1.667
140	189	301	1210	1.430
160	216	344	1840	1.250
180	243	387	2070	1.112
200	270	430	2300	1.000
220	297	473	2530	0.911
240	324	516	2760	0.839
260	351	559	2990	0.770

under investigation. The results of some of these tests are shown on Figs. 5, 6, 7.

The test results permit the following conclusions which can be considered accurate for all practical purposes *(4)*. *(a)* Drainage through the mold varies directly as the square root of the mold head (Fig. 5). *(b)* Drainage varies inversely as the square root of the sheet weight (Fig. 6). *(c)* Drainage varies directly as the freeness (Fig. 7). The temperature during all these tests was about 84 deg. F.

The total flow to the vat is given by the main valve setting and the up-flow level. The gallons per minute of circulating stock is given by the depth of flow over the circulating dam. The difference between the former and the latter is the gallons per minute drained through the mold. This drainage was corrected for mold head of 20 inches and sheet weight of 26 lb./M with 5% moisture. This corrected drainage is directly proportional to freeness after jordans or at the vat inlet. The gallons per minute drainage understand standard conditions is of itself a practical freeness indication. It can be correlated with laboratory freeness tests as shown in Fig. 7. When the machine went into operation with its new system, it quickly became evident that the formation bottle-neck had been removed. The speed of the machine was quickly brought up to driving and drying limitations and has been operating at those speeds ever since. Where formation had not permitted speeds higher than 325 f.p.m. previously, superior formation is now obtained at a regular speed of 360 f.p.m. Tonnage has been increased approximately 10%.

TABLE II

	Old Vat Part	Streamflow Vat System
26 lb./M sheet, f.p.m.	310–325	355–365
Freeness after jordans	130	185
Freeness vat inlet	115	275
Mold head, inches	19	32
Drainage, g.p.m.	1250	2500
Fresh water, g.p.m.	1100	700
Weight var. across, lb./M.	about 4	less than 1
Weight variation, %	14	3.5
Power per ton, kw. hr.	391 approx.	372 approx.
Burst factor	16.5-17.0	16.5
Tear, cross direction	69	70
Tensile, machine direction	8.4	8.85
Tensile, cross direction	3.9	3.9
Stretch, machine direction	1.35	1.35

While it is too early to give a final judgment, all indications such as physical tests, corrugating trials, and customer reactions show that the sheet is definitely superior to that previously made at the lower speed.

The stock is much freer than it had been possible to run before. The stock can now be prepared to suit the sheet rather than formation. Incidentally while it is too early for definite figures this must permit some reduction in stock preparation power per ton or cooking time or both. The capacity of the mill is thereby increased. The freer stock also makes an easier drying sheet. Much less fresh water is necessary than formerly was needed. This perhaps is due to the necessity of getting rid of the many fines in the over slow stock. This saves stock as well as water. The sheet is now automatically level (within close limits) where average variations previously were about 14%.

A comparison of operating data for the old vat part and the stream-flow vat system is given in Table II.

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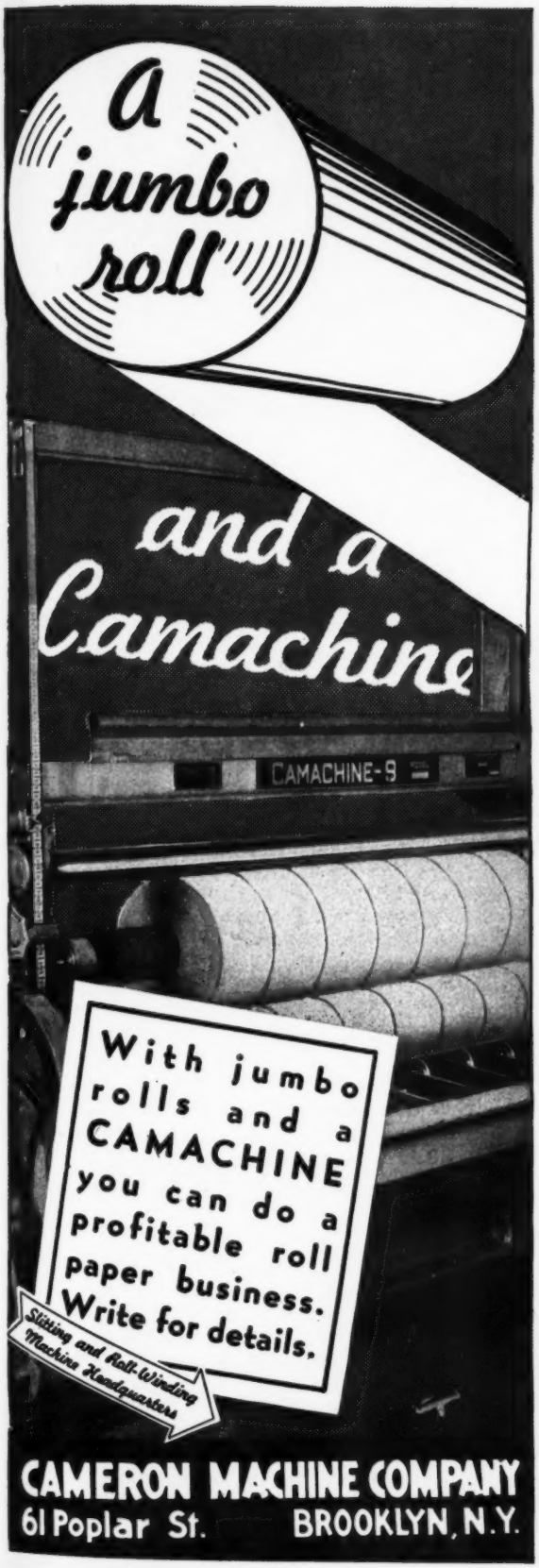
(3) Goldsmith, P. H., "The Pusey & Jones streamflow vat," *Paper Mill* (Oct. 21, 1939).
(4) Goldsmith, P. H., "Cylinder formation," *Tech. Assoc. Papers* 21:125-134 (June, 1938).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Blue Asbestos

IMPORTANT NEWS!

IMMEDIATE SHIPMENT

can be made from factory stock of *SUPERCUTNO Packing manufactured from genuine imported African Blue Asbestos.

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The importation from Africa of Blue Asbestos has now been practically cut off. Foreseeing this situation, we have obtained a large supply of Blue Asbestos for our *SUPERCUTNO Acid-resisting Packing. This large stock enables us to meet all requirements and to make *immediate shipment* of *SUPERCUTNO.

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ALL HEAVY ACIDS are successfully packed with *SUPERCUTNO Packing, which is lubricated to withstand corrosive action and to reduce friction.

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101 PARK AVE, NEW YORK, N. Y.

*SUPER CUTNO PACKING for acids

made by the manufacturers of PALMETTO

*Reg. U.S. Pat. Off.

Imports of Paper and Paper Making Stock

Giving Manifests of New York, Boston, Philadelphia and Other Ports of Newsprint, Wrapping, Writing, Coated, Blotting, Tissue, Strawboard; Bleached Sulphite More Acute—Some Grades of Old Waste Lower.

Effective September 30, 1939, under Treasury Decision 49,970, all publications, exchanges and trade associations, were denied access to import manifests at the New York Customs House. The Paper Trade Journal and other interested parties have vigorously protested this ruling, and as soon as the order of the Treasury Department is modified or rescinded, full publication of all manifests will be resumed in these columns. In the interim, the Paper Trade Journal is making every possible effort to gather all available information from manifests, at various outside sources.

NEW YORK IMPORTS

WEEK ENDING APRIL 11, 1941

SUMMARY

Newsprint .....12,823 rolls

NEWSPRINT

——, ——, Port aux Basques, 1,886 rolls.
——, ——, Liverpool, N.S., 6,137 rolls.
——, ——, Cornerbrook, 4,800 rolls.

RAGS, BAGGINGS, ETC.

Atlas Waste Manfg. Co., ——, Havana, 29 bls. cotton sweepings.
——, ——, Montevideo, 5 bls. rags.
National City Bank, ——, Montevideo, 8 bls. rags.
W. Steck & Co., ——, Bombay, 460 bls. old Buffalo pickers.

HIDE GLUE, ETC.

Trans-Atlantic Animal By Products, Inc., ——, Buenos Aires, 100 bags hide glue.
Biological Raw Products, Inc., ——, Buenos Aires, 448 bags ground skin glue.
Manufacturers Trust Co., ——, Buenos Aires, 36 bls. blue stock.

CASEIN

A. Hurst & Co., ——, Buenos Aires, 834 bags.
American British Chemical Supplies, ——, Buenos Aires, 834 bags.

BOSTON IMPORTS

WEEK ENDING APRIL 11, 1941

E. Butterworth & Co., Inc., ——, Bombay, 200 bls. old Buffalo pickers.

LOS ANGELES IMPORTS

WEEK ENDING APRIL 11, 1941

——, ——, St. Austell, 1,500 bags china clay.
——, ——, Tokyo, 1 cs. writing paper.
——, ——, Ocean Falls, 2,423 rolls newsprint.

Howard Tayloe Engaged to Nancy Bond

Announcement was made last week of the engagement of Howard Tayloe of Memphis, Tenn., to Miss Nancy Bond of Jackson, Tenn. The wedding is to be in June. Mr. Tayloe is vice-president and manager of the Tayloe Paper Company, 420-424 South Front street, Memphis, Tenn.

Government Paper Bids and Awards

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., April 16, 1941 — R. P. Andrews Paper Company has been awarded the contract for furnishing the Government Printing Office with 45,600 pounds (600,000 sheets) of 22¼ x 32¼ M.F. book paper at 5.13 cents, bids for which were received on March 26.

Paper Corp. of U. S. will furnish 40,000 pounds (250,000 sheets) of 25 x 38 M.F. book paper at 6 cents; bids for which were received on March 21.

Barton, Duer & Koch Paper Company will furnish 55,000 pounds (418,375 sheets) of 32 x 48 white sulphite writing paper at 5.39 cents, bids for which were received on March 17.

Whitaker Paper Company will furnish 2,000 sheets of 20 x 24 red on one side glazed paper at $10.40 per M sheets. R. P. Andrews Paper Company will furnish 9,000 pounds (1,000,000 sheets) of 8 x 10½ white mimeograph bond paper at 8.4 cents. Bids for both of these items were received on March 12.

The Printing Office has received the following bids for 152,380 pounds of antique printing in 38" rolls: R. P. Andrews Paper Company, 4.89 cents; Barton, Duer & Koch Paper Company, 5.552 cents; Stanford Paper Company, 5.28 cents; Whitaker Paper Company, 5.24 cents; Mudge Paper Company, 4.915 cents; Old Dominion Paper Company, 5.86 and 5.47 cents; Walker Goulard Plehn Company, 4.95 cents; Perkins-Goodwin Company, 4.84 cents; Paper Corporation of U. S., 4.88 cents; Cauthorne Paper Company, 5.29 cents; and Marquette Paper Company, 5.20 cents.

For 16,362 pounds (37,000 sheets) of buff sulphite index paper: Whitaker Paper Company, 6.9 cents; Mudge Paper Company, 6.81 cents; Barton, Duer & Koch Paper Company, 6.87 cents; and Old Dominion Paper Company, 7.98 cents.

H. G. Buck Goes with Industrial Tape

Texcel Division of the Industrial Tape Corporation, New Brunswick, N. J., announces the appointment of H. George Buck of Syracuse as sales representative.

Buck has been placed in charge of a major portion of the Upper New York State territory. He will be concerned solely with the sales of the corporation's Texcel cellophane tape.

Up to the time of his present appointment, Buck has been in the paper business, serving with Alling & Cory, Rochester, N. Y. for twenty years, the last ten of them as manager of the Syracuse office.

He will attend his first meeting of the company's sales representatives April 5 at New Brunswick, where national advertising and merchandising plans of the cellophane tape branch of the business for the balance of 1941 will be discussed.

From THIS PAPER MAKING PROCESS GREW THE 1941 MODERN PRODUCTION PAPER MILL

It was the art of paper making, in 1764—production limited to the individual effort of the workman. But, even then felt layers were used to remove water from the paper, put between the felt layers and pressed. As hand methods gave way to production machines, so too, progress was made in felt making. Appleton Felts have since 1890 kept pace with the paper industry until today Appleton Felts fully meet all requirements of modern paper mill production.

APPLETON WOOLEN MILLS, APPLETON, WIS.

HIGHEST QUALITY CLAYS

LUMP and POWDERED } IMPORTED — PAPER MAKERS IMPORTING CO. INC. BOSTON, PENNSYLVANIA, U.S.A. — DOMESTIC { CRUDE CRUSHED, AIR FLOATED, WATER WASHED

JORDAN FILLINGS
BEATER BARS
BED PLATES
The Noble & Wood Machine Co.
HOOSICK FALLS, N. Y.

H. G. WEBER & COMPANY
Builder of High Speed Bag Machines
Grocery, Duplex, Coffee, Flour, Cellophane Satchel Bottom, Tuber & Bottomers Automatic Compensating Device.
KIEL WISCONSIN

CABBLE WIRES
WM. CABBLE EXC. WIRE MFG. CO.
80-88 AINSLIE ST., B'KLYN, N. Y.
SERVING THE INDUSTRY SINCE 1848

New York Paper and Pulp Market Review

Paper Market Active With Most Mills At Capacity and Backlogs Increasing In Some Lines—Pulp Market Strong With No Important Change This Week—No. 1 Mixed and Corrugated Lower.

Office of the PAPER TRADE JOURNAL,
Wednesday, April 16, 1941.

Demands for many kinds of paper and paper products continues its upward trend with many branches of the paper and pulp industry operating at capacity. Reports from many manufacturers' representatives, jobbers, and general paper merchants this week reflect high sales volume and indicate that the market position of paper and the outlook for the future is regarded in the trade as bright.

The index of general business activity for the week ended April 5 declined to 121.7%, from 124.3% for the preceding week, compared with 98.1% for the corresponding week last year.

Paper board production for the week ended April 5 was 83.0%, compared with 68.0% for 1940, with 71.0% for 1939, with 58.0% for 1938, and with 87.0% for the corresponding week for 1937.

Trade reports indicate a strong paper market, with prices firm, most mills operating at capacity and many reporting steadily increasing backlogs of orders. Although demand is exerting pressure for higher prices, no high-price level is viewed as likely. The industry is cooperating effectively with the Federal Price Administrator, Leon Henderson, and it is the expectation of government economists that prices of nearly all products and commodities may be kept from rising too rapidly and too high.

Although a moderate upward revision from long prevailing market quotations on at least one grade of paper, is expected in some quarters of the trade, no important change from current prices is generally looked for before the third quarter.

Chemical Pulp

The wood pulp market continues to reflect a strong position, which is expected to continue under the pressure of a rising demand for all grades of chemical pulp, and with little prospect of shipments of any important tonnages of Scandinavian pulp for some time.

No important change has been reported in the wood pulp market at this date. Although higher prices are expected in some quarters of the trade on contracts for the third quarter, no one in the trade is inclined to comment on the future trend of prices.

Rags

Mill demand this week is reported more active in some of the lower grades of new rags. No important price advances have been reported at this date, but No. 1 white shirt cuttings are lower and currently quoted at from 6.12½ to 6.25. New unbleached rags are also lower and currently quoted at from 6.12½ to 6.25.

Old Rope and Bagging

The old rope market is firm under a strong demand, and limited supplies. Prices continue unchanged.

Trading in old bagging continues active, with this market in a strong position. No important change from prevailing market quotations has been reported at this date.

Old Waste Paper

Mill buying of old waste paper continues active, with prices in the lower grades easing off. Lower quotations are currently quoted on old kraft, machine compressed bales, at from 1.30 to 1.40; on strictly folded news, at from .57½ to .62½; on corrugated, at from .57½ to .62½, and on No. 1 mixed paper, currently quoted at from .42½ to .47½.

Twine

No important change in demand or prices has been reported this week on any grade of hard or soft fiber twines. The market is active and prices firm.

Newsprint Gains in March

Production of newsprint in Canada during March 1941 amounted to 275,769 tons and shipments to 265,724 tons, according to the News Print Service Bureau. Production in the United States was 87,376 tons and shipments 85,503 tons, making a total United States and Canadian newsprint production of 363,145 tons and shipments of 351,227 tons. During March, 29,423 tons of newsprint were made in Newfoundland, so that the total North American production for the month amounted to 392,568 tons. Total production in March 1940 was 355,949 tons.

The Canadian mills produced 48,540 tons more in the first three months of 1941 than in the first three months of 1940, which was an increase of six and six tenths per cent. The output in the United States was 5,496 tons or two and two tenths per cent more than in the first three months of 1940; in Newfoundland production was 8,796 tons or ten and nine tenths per cent more, making a total increase of 62,832 tons, or five and nine tenths per cent more than in the first three months of 1940.

Stocks of newsprint paper at the end of March were 186,182 tons at Canadian mills and 18,790 tons at United States mills, making a combined total of 204,972 tons compared with 193,054 tons on February 28, 1941, and 228,552 tons at the end of March 1940. There was some further accumulation of tonnage at points from which water shipments will later be made.

R. M. Olmsted Is Made President

DALLAS, Tex., April 14, 1941—Robert M. Olmsted was president of the Olmsted-Kirk Paper Company recently, following his election at the annual meeting of stockholders and directors. Mr. Olmsted, who for the past seven years has been vice president and general manager of the company, succeeds his father, the late Harry A. Olmsted.

Other officers elected were Ben Hartley, vice president; Mrs. Harry A. Olmsted, honorary vice president, and Fred E. Neary, secretary-treasurer.

S.W.W.

BEATER TACKLE

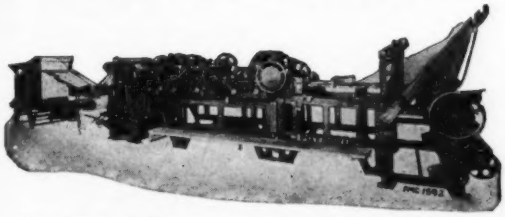
If you feel a special bed plate or beater bar will solve a beating problem, ask our engineers for their assistance. They know beater tackle — can help you choose a special or standard design from the complete SWW line.

SIMONDS WORDEN WHITE CO.
Dayton, Ohio

BAG MAKERS WOULD ENJOY THIS

You would enjoy perusing through POTDEVINS' vault of bag machine designs. For there you would read the history of bag manufacturing almost from its origin. The single-size, slow "first editions" would be there. And the modern, high-speed 1941 "editions."

Amidst this treasure of experience and knowledge, you would realize again why POTDEVIN is the bag makers' source of supply.



The design of this machine calls for the manufacture of large flat and square specialty bags and gable-top dry-cleaner bags—two color printed with aniline or oil inks. PMC 1592

POTDEVIN
PAPER BAG MACHINES

POTDEVIN MACHINE CO.
EST. 1893
1223 38TH ST. BROOKLYN, N. Y.

POTDEVIN

IS YOUR PULP-MAKING PROBLEM IN ONE OF THESE BEAKERS?

Pulp manufacturers all over the country are taking advantage of Solvay's outstanding pulp technology service . . . a service which has proven highly successful because of Solvay's emphasis on down-to-earth as against "hypothetical" research.

Solvay is interested in the *every day* manufacturing problems . . . interested in helping the pulp maker get more out of his products—in helping him produce better products at lower cost.

In the Solvay laboratories, actual pulp and paper men with years of practical experience in pulp and paper mills study your problems and make sample runs of pulp as a basis for recommendations.

Solvay will be glad to send these pulp specialists into your plant to study actual operating conditions *and help adapt laboratory findings to specific plant conditions.*

Development of new products and new processes is another important aspect of Solvay research for the pulp and paper industry. One recent example of this work worth knowing more about is the new SOLVAY MULTI-STAGE PULP BLEACHING OPERATION.

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These Solvay Products help you make better Pulp for all Purposes
SOLVAY CAUSTIC SODA • SOLVAY LIQUID CHLORINE
SOLVAY SODA ASH

MISCELLANEOUS MARKETS

Office of the PAPER TRADE JOURNAL,
Wednesday, April 16, 1941.

BLANC FIXE—Quotations on blanc fixe are firm and continue unchanged at prevailing market levels. Demand reported steady for the week. The pulp is currently quoted at $35 per ton, in barrels, at works; the powder is offered at $50 per ton, f.o.b., works.

BLEACHING POWER—Prices on bleaching powder are firm with shipments reported in good volume for the week. Bleaching powder is currently quoted at $2 per 100 pounds, in drums, at works.

CASEIN—Quotations on casein are reported firm. Demand moderate for the week. Standard domestic casein, 20-30 mesh, is current quoted at 14 cents per pound; 80-100 mesh, at 14½ cents per pound; all prices in bags, car lots. Standard Argentina casein is current offered at 12½ cents per pound. No quotations on French casein.

CAUSTIC SODA—Prices on caustic soda are unchanged. Demand reported good for the week. Solid caustic soda is currently quoted at $2.30 per 100 pounds; flake and ground at $2.70 per 100 pounds, in drums, at works.

CHINA CLAY—Quotations on china clay are firm and continue unchanged this week. Domestic filler clay is currently quoted at from $7.50 to $15 per ton; coating clay at from $12 to $22 per ton, at mines. Imported clay is quoted at from $13 to $25 per long ton, ship side.

CHLORINE — The demand for chlorine is reported good. Prices are unchanged; and the market firm for the current week. Chlorine is currently quoted at $1.75 per 100 pounds, in single-unit tank cars, f.o.b., works.

ROSIN—The rosin market is reported as firmer with prices higher for the week, "G" gum rosin is currently quoted at $1.93 per 100 pounds, in barrels, Savannah. "FF" wood rosin is currently quoted at $1.91 per 100 pounds, in barrels, New York. Seventy per cent gum rosin size is quoted at $2.60 per 100 pounds, f.o.b., works.

SALT CAKE—Prices on salt cake are firm under a good demand with current quotations continuing nominal. Domestic salt cake is currently quoted at $17 per ton in bulk; chrome salt cake at $16 per ton. All prices in car lots, f.o.b., shipping point. The quotation of $16.50 per ton on imported salt cake continues nominal.

SODA ASH—Quotations on soda ash are firm and continue to conform to prevailing market quotations. Demand reported good. Quotations on soda ash in car lots, per 100 pounds, are as follows: in bulk, $.90 in paper bags, $1.05; and in barrels, $1.35.

STARCH—Prices on corn starch are firm and continue unchanged for the current week. Pearl is currently quoted at $3 per 100 pounds; powdered starch at $3.10 per 100 pounds; all prices in bags, car lots, f.o.b., Chicago.

SULPHATE OF ALUMINA—Quotations on sulphate of alumina are firm. Shipments reported in good volume for the week. The commercial grades are currently quoted at $1.15 per 100 pounds; iron free at $1.60 per 100 pounds, in bags, car lots, f.o.b., works.

SULPHUR—Prices on sulphur are firm and continue to conform to prevailing market quotations. Annual contracts are currently quoted at $16 per long ton, f.o.b., mines. Spot and nearby car lots are quoted at $19 per ton.

TALC—Quotations on talc are firm and continue unchanged at prevailing market prices. Domestic talc is currently quoted at from $15 to $21 per ton, at mills. No quotations on imported talc.

MARKET QUOTATIONS

Paper

(Delivered New York)

News, per ton—			
Roll, contract	$50.00	@	—
Sheets	58.00	"	—
Kraft—per cwt.—Delivered Zone A			
Northern, Extra Quality	$5.25	@	$5.75
Superstandard	4.87½	"	5.25
Northern Standard Wrapping	4.37½	"	4.62½
Standard Wrapping	4.25	"	—
Tissues—Per Ream—Carlots			
White No. 1	.97½	"	—
White No. 1 M. G.	.95	"	—
White No. 1½	.80	"	—
White No. 2	.75	"	—
Anti-Tarnish M. G.	.80	"	—
Colored	.85	"	—
Kraft	.87½	"	—
Manila	.77½	"	—
Unbl. Toilet, 1 M.	3.75	"	—
Bleached Toilet	5.26	"	—
Paper Towels, Per Case—			
Unbleached, Jr.	2.10	"	—
Bleached, Jr.	3.60	"	—
Manila—per cwt.—C. l. f. a.			
No. 1 Jute	8.25	@	10.25
No. 1 Manila Wrapping, 35 lb.	5.25	"	—
No. 2 Manila Wrapping, 35 lb.	5.00	"	—
Boards, per ton—			
News	45.00	@	—
Chip	45.00	"	—
Sgl. Mla. Ll. Chip	60.00	"	—
White Pat. Coated	75.00	"	—
Kraft Liners	55.00	"	—
Binders Boards	80.00	"	—

The following are representative of distributors' resale prices:

Rag Content Bonds and Ledgers—White, Assorted Items, Delivered in Zone 1:

	Bonds		Ledgers	
100% Rag Ext. No. 1	$39.10	@ $46.00	$40.25	@ $47.25
100% Rag	31.05	" 36.50	32.20	" 37.75
85% Rag	....	"	29.90	" 35.00
75% Rag	23.60	" 27.75	24.75	" 29.00
65% Rag	....	"	21.65	" 26.25
50% Rag	17.55	" 21.50	18.70	" 22.75
25% Rag	14.65	" 17.75	15.80	" 19.25

Colors at $1.00 cwt. extra.

Sulphite Bonds and Ledgers—White, Assorted Items. Delivered in Zone 1:

	Bonds		Ledgers	
No. 1	$9.35	@ $11.50	$11.55	@ $12.75
No. 2	8.50	" 10.25	9.65	" 11.75
No. 3	8.05	" 9.25	9.20	" 11.25
No. 4	7.70	" 9.50	8.90	" 10.75

Colors $1.00 cwt. extra.

Free Sheet Book Papers—White, Cased Paper.

Delivered in Zone 1:

No. 1 Glossy Coated	$11.90	@	$13.50
No. 2 Glossy Coated	10.35	"	11.75
No. 3 Glossy Coated	9.55	"	11.00
No. 4 Glossy Coated	9.15	"	10.50
No. 1 Antique (watermarked)	9.05	"	10.50
No. 2 Offset	8.40	"	9.75
A Grade E. F.	8.20	"	9.50
A Grade S. & S. C.	8.45	"	9.75
B Grade E. F.	7.65	"	8.75
B Grade S. & S. C.	7.90	"	9.00
C Grade E. F.	7.35	"	8.50
C Grade S. & S. C.	7.60	"	8.75
D Grade E. F.	7.10	"	8.25
D Grade S. & S. C.	7.35	"	8.50

Ivory & India at $.50 cwt. extra.

Mechanical Pulp

(On Dock, Atlantic Ports)

No. 1 Imported—			
Moist	No prices		
Dry	No prices		
(Delivered)			
No. 1 Domestic and Canadian	40.00	@	42.00

Chemical Pulp

(On Dock, Atlantic, Gulf and West Coast Ports)

Bleached Sulphite (Domestic and Foreign)—			
Prime Bleached Sulphite	3.72½	@	3.87½
Prime Qualities—			
Easy-Bleaching Sulphite	3.17½	"	3.75
Strong Unbleached Sulphite	3.17½	"	3.75
News Grade, delivered			
Unbleached Sulphite	58.00	"	64.25
(On Dock, Atlantic Ports)			
Kraft Bleached	4.12½	"	—
Kraft Light & Strong	3.50	"	3.90
Kraft No. 1	3.40	"	3.80
(F. o. b. Pulp Mill)			
Kraft Domestic and Canadian	2.75	"	3.37½
(Delivered)			
Soda Bleached	3.30	"	—

Add 60 cents per short ton, dock charges for Albany; $2.50 for Lake Ports East and $3.50 for Lake Ports West of Mackinac Straits.

Domestic Rags

New Rags

(Prices to Mill f. o. b. N. Y.)

Shirt Cuttings—			
New White, No. 1	6.12½	@	6.25
Silesias No. 1	4.50	"	4.65
New Unbleached	6.12½	"	6.25
Blue Overall	4.15	"	4.50
Fancy	3.25	"	3.50
Washables	2.00	"	2.15
Mixed Khaki Cuttings	2.75	"	3.00
O. D. Khaki Cuttings	3.00	"	3.15

Old Rags

White, No. 1—			
Repacked	3.50	"	3.65
Miscellaneous	2.75	"	3.00
White, No. 2—			
Repacked	2.50	"	2.75
Miscellaneous	2.00	"	2.25
Thirds and Blues—			
Repacked	1.50	"	1.65
Miscellaneous	1.10	"	1.25
Roofing Rags—			
No. 1	1.35	"	1.40
No. 2	1.05	"	1.10
No. 3 (bagging)	.90	"	1.00
No. 4	.60	"	.65
No. 5A	.60	"	.65

Foreign Rags

All prices nominal.

New Rags

New Dark Cuttings	2.25	@	2.40
New Mixed Cuttings	2.00	"	2.20
New Light Silesias	5.50	"	5.75
Light Flannelettes	5.50	"	5.75
New White Cuttings	7.00	"	7.50
New Light Oxfords	4.00	"	4.50
New Light Prints	3.00	"	3.25

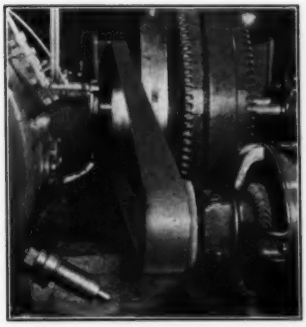
Old Rags

No. 1 White Linens	7.50	"	8.50
No. 2 White Linens	6.50	"	7.50
No. 3 White Linens	4.50	"	—

A RHOADS—PLANNED DRIVE...FOR

Production without Interruption!

HOW TO REVIVE WEAK DRIVES AND SOUNDLY PLAN NEW ONES



A RHOADS RECOMMENDATION for this Diesel engine drive was 32" four-ply Special TANNATE. Belt is running perfectly, gives every promise of years of efficient service.

★ Rhoads has helped thousands of firms throughout industry to find the answers . . . to determine the right set-up for the specific problem . . . so that, from prime mover to machine, power flows smoothly, with maximum efficiency.

Today, more than ever, it is an important responsibility to keep production moving smoothly and keep unit cost down. And, you'll find it a great help, short-cut and time-saver, to call in Rhoads for advice.

Thousands of firms have found this a good way to obtain better drives at lower cost. A note on your letterhead puts Rhoads experience to work for you.

STEP UP PRODUCTION with

RHOADS *Tannate* WATERSHED LEATHER BELTING

J. E. RHOADS & SONS • 35 N. Sixth St., Phila., Pa.

NEW YORK—CHICAGO—ATLANTA—CLEVELAND—Founded 1702

AN *Easy Wetting* CARBON BLACK

PARIS II Black is especially easy to disperse because it is free from oiliness and coarse agglomerates. Ultramicroscopic fineness of particles assures even distribution and uniformity of color. Other qualities which give PARIS II Black advantages in the making of black and gray paper stocks are:

GOOD COLOR VALUE
High tinctorial strength

•

EASE OF HANDLING

•

UNIFORMITY

•

PARIS II *Black*

Compressed or Semi-Compressed for Jet Black Papers

•

Uncompressed for Tinting Gray Stocks

We invite technical inquiry

200 TONS OF SMOKE A DAY

COLUMBIAN CARBON CO. • BINNEY & SMITH CO.

MANUFACTURER DISTRIBUTOR

41 East 42nd St., New York, N. Y.

No. 4 White Linens.	2.25	@	3.25
No. 1 White Cotton.	4.25	"	4.75
No. 2 White Cotton.	3.25	"	3.75
No. 3 White Cotton.	2.50	"	3.00
No. 4 White Cotton.	1.90	"	2.20
Extra Light Prints..	2.00	"	2.40
Ord. Light Prints...	1.75	"	2.15
Med. Light Prints...	1.55	"	1.95
Dutch Blue Cottons.	2.25	"	2.50
French Blue Linens.	3.00	"	—
Checks and Blues...	2.00	"	—
Linsey Garments....	1.90	"	2.00
Dark Cottons.....	1.50	"	1.60
Old Shopperies.....	1.30	"	1.45
New Shopperies.....	1.45	"	1.50
French Blues	2.25	"	2.50

Old Rope and Bagging

(Prices to Mill, f. o. b. N. Y.)

Gunny No. 1—			
Foreign	Nominal		
Domestic	3.00	@	3.25
Wool Tares, light....	2.50	"	2.75
Wool Tares, heavy..	2.50	"	2.75
Bright Bagging.....	2.50	"	2.75
Manila Rope—			
Foreign	5.50	"	5.75
Domestic	5.50	"	5.75
Jute Threads.....	2.75	"	3.00
Sisal Strings	2.10	"	2.35
Mixed Strings.....	1.10	"	1.20

Old Waste Papers

(F. o. b. New York)

Shavings—			
White Envelope Cuttings	3.10	@	3.25
Ordinary Hard White No. 1....	2.25	"	2.50
Soft White No. 1..	1.80	"	1.90
Soft White Extra..	2.50	"	2.60
Flat Stock—			
Stitchless	1.10	"	1.25
Overissue Mag.....	.90	"	1.00
Solid Flat Book....	.90	"	1.00
Crumbled No. 1....	.70	"	.75
Ledger White Stock.	1.60	"	1.70
Ledger Stock Colored	1.20	"	1.30
Manila—			
New Env. Cut....	1.70	"	1.80
New Cuttings.....	1.30	"	1.40
Old Kraft Machine Compressed bales..	1.30	"	1.40
News—			
No. 1 White News	1.75	"	1.90
Strictly Overissue .	.96	"	1.00
Strictly Folded....	.57½	"	.62½
Corrugated	.57½	"	.62½
No. 1 Mixed Paper..	.42½	"	.47½

Twines

(F. o. b. Mill)

(Soft Fiber)

Coarse Polished—			
India	.19½	@	—
White Hemp	.19½	"	—
Fine Polished—			
Fine India.....	.22½	"	—
Unpolished—			
Box	.15¾	"	—
Paper Makers.....	.15½	"	—
Tube Rope.....	.16¾	"	—
Wall Paper.....	.19½	"	—
Wrapping	.19½	"	—
Soft Fiber Rope...	.17½	"	—
Cotton	.24	"	—
(Hard Fiber)			
Medium Java.....	.12	"	—
Mex. Sisal.....	.11	"	—
Manila	.25	"	—

PHILADELPHIA

Domestic Rags (New)

(Price to Mill, f. o. b. Phila.)

Shirt Cuttings—			
New White No. 1.	.06¾	@	.07
New White No. 2.	.03½	"	.04
Light Silesias.....	—	"	.04½
Silesias, No. 1....	—	"	.04
Black Silesias, soft	—	"	.03
New Unbleached..	.06	"	.06¾
Washable Prints..	.02½	"	.03
Washable No. 1..	—	"	.01½
Blue Overall.....	.04	"	.04½
Cottons—According to grades—			
Washable shredding	—	"	.01½
Fancy Percales....	.03	"	.03¼
New Black Soft...	.02½	"	.02¾
New Light Seconds	—	"	.04
New Dark Seconds	—	"	1.50
Khaki Cuttings—			
No. 1 O. D.....	.03	"	.03¼
No. 2 Mixed.....	.01¾	"	.02
Corduroy	.01¾	"	.01½
New Canvas.....	.04½	"	.05
New Black Mixed.	—	"	.02¾

Domestic Rags (Old)

White No. 1—			
Repacked	3.00	@	3.50
Miscellaneous	2.75	"	3.00
Thirds and Blues—			
Miscellaneous	1.35	"	1.50
Repacked	1.55	"	1.65
Black Stockings (Export)	3.50	"	4.00
Roofing Stock—			
Foreign No. 1....	Nominal		
Domestic No. 1...	1.30	"	1.35
Domestic No. 2...	1.10	"	1.15
Roofing Bagging..	1.00	"	1.05

Bagging

(F. o. b. Phila.)

Gunny, No. 1—			
Foreign	Nominal		
Domestic	2.50	@	2.75
Manila Rope.....	—	"	5.50
Sisal Rope.....	2.00	"	2.25
Mixed Rope.....	.75	"	1.00
Scrap—			
No. 1.....	2.60	"	2.80
No. 2.....	—	"	1.50
Wool Tares, heavy..	3.75	"	4.00
No. 1 New Light Burlap	3.00	"	4.00
New Burlap Cuttings	2.50	"	3.00

Old Papers

(F. o. b. Phila.)

Shavings—			
Hard White Special	2.50	@	2.70
Hard White.....	2.35	"	2.40
No. 1 Soft White..	1.90	"	2.00
No. 2 White.....	1.70	"	1.85
No. 1 Mixed.....	.90	"	1.00
Solid Ledger Stock..	1.90	"	2.00
Ledger Stock, white.	1.50	"	1.60
Ledger Stock, colored	1.20	"	1.25
No. 1 Books, heavy..	.85	"	.90
Manila Cuttings.....	1.75	"	1.80
Print Manila.....	.60	"	.65
Container Manila....	.50	"	.55
Kraft Paper	1.40	"	1.45
No. 1 Mixed Paper...	.45	"	.50
Straw Board Chip...	.45	"	.50
Binders Board Chip..	.35	"	.40
Corrugated Board...	.60	"	.65
Overissue News.....	.70	"	.75
Old Newspapers.....	.60	"	.65

BOSTON

Old Papers

(F. o. b. Boston)

Shavings—			
No. 1 Hard White	2.90	@	3.00
No. 1 Soft White	2.50	"	2.75
No. 2 Mixed.....	.90	"	1.00
Solid Ledger Books..	2.00	"	2.10
Overissue Ledger Stock	1.75	"	2.00
White Ledger Stocks	1.50	"	1.65
Mixed Ledgers	1.25	"	—
No. 1 Heavy Books	1.10	"	1.20
No. 1 Books, Light..	.75	"	.85
Crumpled Stitchless Book Stock.....	1.15	"	1.20
Manila Env. Cuttings	2.60	"	2.65
Manila Envelope Cuttings, extra quality	2.75	"	2.80
White Blank News..	1.70	"	1.80
No. 1 Kraft.....	1.25	"	1.40
Extra No. 1 Kraft..	1.75	"	—
Mixed Papers	.45	"	.47½
Print Manila	.60	"	.65
Container Manila....	.60	"	.70
Old Newspapers.....	.50	"	.55
Paper Wool Strings.	.95	"	1.10
Overissue News.....	.65	"	.70
Box Board Chips....	.35	"	—
Corrugated boxes....	.55	"	.65
Kraft corrugated boxes	1.15	"	1.25
New Kraft Corrugated Cuttings	1.75	"	—
Screening Wrappers.	.85	"	.90

Bagging

(F. o. b. Boston)

Gunny Bagging—			
Foreign	3.00	@	—
Domestic	3.15	"	—
Sisal Rope.....	2.60	"	—
Mixed Rope	.85	"	1.00
Transmission Rope—			
Foreign	2.50	"	2.75
Domestic	2.75	"	2.90
Soft Jute Rope.....	3.75	"	4.00
Manila Rope—			
Foreign .....(nominal)			
Domestic	5.75	"	6.00
Jute Carpet Threads.	2.25	"	2.75
Bleachery Burlap....	4.25	"	4.75
Scrap Burlap—			
Foreign	3.00	"	—
Domestic	2.85	"	3.10
Scrap Sisal.....	2.50	"	2.60
Scrap Sisal for Shredding	2.50	"	2.60
Wool Tares—			
Foreign	(nominal)		
Domestic	2.85	"	3.00
Aust. Wool Pouches.	2.75	"	3.00
New Burlap Cuttings	3.75	"	4.00
Heavy baling bagging	3.00	"	3.25
Paper Mill Bagging..	1.75	"	2.00
No. 2 Bagging.....	.75	"	.80

Domestic Rags (New)

(F. o. b. Boston)

Shirt Cuttings—			
New Light Prints.	—	@	.03
Fancy Percales....	.03¾	"	4.00
New White No. 1.	.06	"	.06¼
New Light Flannelettes	.03¾	"	4.00
Canton Flannel, Bleached	.06	"	—
Underwear Cutters, Bleached	.05	"	.05¼
Silesias No. 1.....	.04	"	.04¼
New Black Silesias..	3.00	"	3.25
Red Cotton Cuttings	.04	"	.05
Soft Unbleached....	.06	"	.06¾
Blue Cheviots.....	.04¼	"	.04½
Fancy	.01½	"	.01¾
Washable	.01½	"	.01¾
Cottons—According to Grades—			
Blue Overalls.....	.04	"	.04¼
New Black, Soft..	.03	@	.03¼
Khaki Cuttings.....	.02	"	.02½
O. D. Khaki.....	.02½	"	.03¼
Corduroy	.02	"	—
New Canvas.....	.05½	"	—
B. V. D. Cuttings...	.06	"	.06¼

Domestic Rags (Old)

(F. o. b. Boston)

White No. 1—			
Repacked	2.75	@	3.00
Miscellaneous	2.00	"	2.25
White No. 2—			
Repacked	1.90	"	2.00
Miscellaneous	2.00	"	2.25
Twos and Blues.....	2.00	"	2.25
Old Blue Overalls...	1.60	"	2.00
Thirds and Blues....	1.25	"	—
Miscellaneous	1.25	"	1.35
Black Stockings.....	3.50	"	4.00
Roofing Stock—			
No. 1.....	1.20	"	1.25
No. 2.....	.95	"	1.00
No. 3.....	.85	"	.95

Foreign Rags

(F. o. b. Boston)

Canvas .....(nominal)	
Dark Cottons.....(nominal)	
Dutch Blues.....(nominal)	
New Checks and Blues(nominal)	
Old Fustians.....(nominal)	
Old Linsey Garments.(nominal)	
New Silesias.....(nominal)	

CHICAGO

Waste Paper

(F. o. b. Chicago)

Shavings—			
No. 1 White Envelope Cuttings....	3.15	@	—
No. 1 Hard White	2.50	"	2.65
No. 1 Soft White.	2.00	"	2.20
Ledger and Writings	.85	"	.95
Solid Books.....	.83	"	—
Blanks	1.45	"	—
Krafts	1.40	@	1.50
New Kraft Cuts....	1.60	"	1.75
Overissue News.....	.60	"	—
Old Newspapers—			
No. 1 Folded News	.70	"	.80
No. 1 Mixed Paper	.45	"	—
Roofing Stocks—			
No. 1.....	.95	"	1.00
No. 2.....	.85	"	.90

Ontario Holds Safety Meeting

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., April 7, 1941—At the 26th annual meeting of members of the Ontario Pulp and Paper Makers' Safety Association, held April 2, in the King Edward Hotel, Toronto, President A. T. Whealy, of Corrugated Paper Box Company, Leaside, emphasized to the 160 members and guests present, the great importance of conserving productive man-power and thereby aiding the war effort of the nation in the particularly strenuous times which now confront Canadian industry.

The following directors for 1941 were unanimously chosen:

J. H. Albert, J. R. Booth Co.; L. C. Anderson, Ontario Paper Company; B. F. Avery, Great Lakes Paper Company; Geo. Barber, Spruce Falls Power and Paper Company; W. S. Barber, Provincial Paper, Ltd.; L. T. Bradley, Beaver Wood Fibre Company; Geo. W. Brown, Gair Company, Canada; Geo. Carruthers, Sr., Interlake Tissue Mills; W. N. Corbett, Abitibi Power and Paper Company; A. E. H. Fair, Howard Smith Paper Mills; D. McLeod, Kenora Paper Mills; B. D. Millidge, Don Valley Paper Company; Geo. W. Pauline, Alliance Paper Mills; T. E. Silver, Abitibi Power and Paper Company; C. B. Thorne, Canadian International Paper Company; A. T. Whealy, The Corrugated Paper Box Company; J. S. Wilson, Dryden Paper Company; L. F. Winchell, Hinde & Dauch Paper Company of Canada.

Following adjournment of the general meeting, the newly-chosen directors elected Messrs. A. T. Whealy and T. E. Silver, president and vice-president, respectively, for 1941, they having already served during 1940. D. B. Chant continues as secretary-engineer, a position he has held continuously since 1933.